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ABSTRACT

This collection of 21 booklets about the Western Illinois University (WIU) model for teacher education, centered on principles of instructional designs, targets five technologies: computer applications, telecommunications, distance learning, interactive multimedia, and instructional video. Teacher competencies are specified for instructional design and the five targeted technologies; they are achieved through core and content-based modules. After an extensive overview, "Breaking the Barriers, Meeting Challenges," core modules include: (1) "Using the Computer to Enhance Teacher Productivity"; (2) "Telecommunications for the K-12 Classroom"; (3) "Distance Education in the K-12 Classroom"; (4) "Interactive Multimedia for the Classroom"; (5) "Instructional Video Production for the K-12 Classroom"; and (6) "Planning for Effective Technology Integration." The 12 content-based modules are: (1) "Technology Applications in the K-8 Science Classroom"; (2) "Teaching Social Studies with Historic Landmarks"; (3) "Electronic Resources for Teaching Secondary Social Studies"; (4) "Integrating Technology into Early Childhood Thematic Teaching"; (5) "Using Technology To Enhance Parent/Community Involvement"; (6) "Producing and Integrating Instructional Video"; (7) "Early Childhood Behavioral Assessment"; (8) "Exploring Planning Approaches for Teaching Thematically"; (9) "Your First Trip on the Internet"; (10) "Using Video To Enhance Understanding of Human Growth and Development"; (11) "Electronic Searching for Children's Literature Resources"; and (12) "Microteaching, Reflective Processing, and Video: A Metacognitive Twist." A program overview, a booklet for each module, a faculty support booklet, description and illustrations of equipment and infrastructure, and two videos are packaged in a file box. (ND)

ED 404 307

Breaking Barriers, Meeting Challenges:
An Overview

Ameritech

Western Illinois University

Tools for Teaching with Technology

The WIU Approach
to Integrating Technology
into Teacher Education

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Tools for Teaching with Technology

Breaking Barriers, Meeting Challenges

An Overview of The WIU Approach to Integrating Technology into Teacher Education

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Supported by
The Governor's/Ameritech EdTech Grant
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College of Education and Human Services
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Macomb, Illinois
1996

Acknowledgments

Tools for Teaching with Technology: The WIU Approach for Technology Integration into Teacher Education is the product of many individuals and several organizations. It reflects nearly a decade of focus within the College of Education and Human Services (COEHS) at Western Illinois University on the infusion of technology into education and demonstrates our continuing efforts to build partnerships with the public schools, state government, the Illinois State Board of Education, and business.

We want to thank Governor Edgar and Ameritech for the $500,000 EdTech Grant award we received in September 1993 which enabled us to accelerate efforts towards integrating technology into our undergraduate and graduate teacher education curriculum. While we had a faculty development plan and staff resources, including an instructional designer, technicians, and video producers, already in place, the addition of the EdTech Grant dollars facilitated the renovation of the College's facilities and the upgrading of our software and technology-based product collection. In addition, the equipment, software, and phone line access funded through the EdTech Grant provided hands-on telecommunications technology access to faculty and students as well as video linkage to preK-12 classrooms.

We want to express our gratitude to the Springfield Public School District #186 central administration for their cooperation and leadership in forming and maintaining a professional development school partnership with us. A special thank you is also in order to the building principals and teachers for their graciousness and generosity in sharing their time and expertise, as well as for allowing us access to their classrooms.

Faculty and staff who have been an integral part of the restructuring of our teacher education program are to be commended for their willingness to embrace the paradigm shift in how we define teaching and to become competent in using the technologies which enable teachers to be facilitators of active learning. The competencies and curriculum modules developed as part of the EdTech Grant activities reflect the quality of effort put forth by our teacher education faculty. Our instructional design, production, and technical support staff are also to be acknowledged for their skills in teaming with faculty in these efforts.

The staff of the College's Satellite Education Network and Interactive Technologies Unit and the Curriculum Publications Clearinghouse deserve recognition and thanks for the many hours of design, graphics and video development, editing, and layout that went into the production of the *Tools for Teaching with Technology* package. And, finally, we want to thank WIU's Visual Production Center for coordinating and executing the photography for this project.

Preface

Our intent in this overview, *Breaking Barriers, Meeting Challenges,* is to tell the story of the WIU approach to integrating technology into our teacher education program. Before we begin to describe our approach in detail, we want to illustrate a few of the reasons we believed this initiative to be so important and to stress the impact it has had on our teacher education curriculum. We will do this by sharing three scenarios of what used to be typical in our teacher preparation program, each followed by a scenario representing what now most likely occurs due to our infusion of technology into the curriculum.

Classroom Observation

It's 11:00 and Karen rushes to board the University bus which will take her and 20 other education students to an area school to observe children in a classroom. She knows this is part of the process of becoming a certified teacher and has enjoyed observing children and various teaching styles at other schools in the past. Dr. Allen has mentioned on occasion that he would like for them to have an opportunity to observe more classrooms with a wider diversity of children as well as to observe teachers who use active learning approaches through the integration of technology. However, few schools within immediate driving distance of WIU can provide this observation environment.

Once inside the school, Karen and the other prospective teachers spread out to observe in several classrooms, temporarily halting classes, and permanently altering the day's normal routine. Although Karen knows she is supposed to focus on the children's behavior primarily, she is curious about how the teacher will interact with the children as well.

A little over one year later:

Students move briskly into the electronic classroom located in Horrabin Hall Room #70 and quickly take their seats. The 30 preservice educators listen as their professor, Dr. Chalmer, addresses the class. As he is talking, a fifth grade teacher and her class appear live via electronic connection on the 5' x 7' screen in the front of the room. The classroom they are observing is in Springfield, 90 miles away, and was selected as a site with which to create a video link in part because of the diversity of children and the fact that the teacher uses collaborative learning techniques through the integration of technology.

"Today we will be observing Ms. Hartsfield's class. Remember to take notes and let me know if you want to see another part of the room, or to focus on a particular student or student-teacher interaction. We will have a chance to speak briefly with Ms. Hartsfield at the end of her class period. Today, the children are working on a science project," explains Dr. Chalmer.

Ms. Hartsfield begins working with the 19 fifth graders in her classroom. The preservice education students watch the large projection television screen attentively and ask to view the remote Springfield classroom from different angles and camera views. Each time, Dr. Chalmer is able to remotely direct and select the appropriate camera. Ms. Hartsfield's class works diligently on their collaborative learning assignments, unaware and unaffected by the scrutiny of future teachers learning their profession as they watch an exemplary teacher in a real life setting in far away Springfield.

Class is dismissed in Horrabin Hall Room #70. The education students are off to their other classes and assignments. They have spent a little over an hour watching a real classroom and then a few minutes interacting with the same practicing exemplary teacher. No classes were disrupted; no time was wasted off task in-transit. In fact, with the appropriate communications technology and electronic classrooms, the remote classroom could have been anywhere in the world and the preservice teachers at Western Illinois University's College of Education and Human Services could have been there.

Classroom Instruction

The hallway of Horrabin Hall is crowded with students heading to their next class. Making his way down the hall is Dr. Davis, professor in the College of Education and Human Services. He is pushing in front of him an audiovisual (AV) cart, loaded with a VCR and a television monitor, as well as the materials for today's lesson—a journal article and a videotape on the subject of "modeling" as an effective teaching technique.

Dr. Davis begins class with a discussion about a recent professional journal article and passes the article around the room. Each student has little time to scan it and still be able to listen to the discussion. Dr. Davis, aware of this, writes down the particulars of the article on the chalkboard—that is, after he patiently erases notes left from the last class from the board. Eventually, it is time to view the videotape. Dr. Davis realizes that not all the students can see or hear the TV very well, so he decides to let the tape run and summarize the material as part of the next day's lecture. It occurs to him that his "modeling" of teaching with technology was less than ideal today.

One year later:

Dr. Davis is working hard in his office at his computer and quickly glances at his watch. It's almost class time and he is hoping to complete his Internet search in time to use the information in his next methods class. At class time, Dr. Davis leaves his office, carrying a videotape, and makes his way into the classroom. After a brief introduction, he quickly directs the Internet browser to an electronic journal's Web page and brings the computer screen up on the 5' X 7' video projector screen at the front of the class.

"I thought you all might be interested in some data on effective instructional modeling I found on the Internet this afternoon. As you can see, this article was just published. I think you might find the 'Potential Implications' section of the article particularly useful for your group projects. I'll post a link to it from our class Web page so you can consult it later."

After a brief discussion, Dr. Davis leads into the topic of the videotape he had planned to show in class. He mentions that he wants the class to think about three questions as they watch the videotape. He places the questions on the Elmo Visual Presenter for the entire class to view on the 5' x 7' screen. Then, without hesitation, he places the videotape in the VCR located in the instructor's console in the classroom and presses play. The lights dim and the video plays on the screen used earlier. The audio is clear and audible from the large speakers located in the room. At an appropriate moment, Dr. Davis freezes the tape and asks the class to note the example. He then proceeds to lead a lively discussion centered on the three questions.

After the videotape, it is time for the assignment. Dr. Davis again brings up the computer screen on the projector screen in front of the room and proceeds to open his Web page where he has posted a new "case" for the collaborative groups to work on this week. He gives the groups a few minutes to review the case and clarify any points of confusion. He also brings up the class syllabus and references, noting pertinent due dates and other resource links on the Internet.

Finally, he closes class by noting, "Please send your case analysis assignments to me via e-mail by Friday and I'll add them to our Web page for all of you to review prior to next week's exam. And, as always, if you have any questions, e-mail me any time or stop by before class." Since Dr. Davis spends less time pushing AV carts up and down the halls and sorting through periodicals in the library, he finds he has more time for his students.

Student Presentation

The students begin to grow restless as their fellow student, David, continues his presentation. Their attention drifts as he places his transparency on the overhead and focuses the projector. David tries to regain the students' attention by injecting some statistical data into his lecture-based microteaching presentation, but to no avail. After 15 minutes, he finishes, frustrated by the obvious lack of attention. Dr. Helmer attempts to ask a leading question of David to promote further discussion. The other students fill out the written critique forms about his microteaching. For nearly an hour, the process continues, student after student presenting their microteaching lessons.

One year later:

The students eagerly look to the front of the classroom as Amanda takes her position near the electronic podium. One of the other students begins videotaping her microteaching lesson for Amanda to review and critique later. She dims the lights slightly and the presentation begins with a computer graphic displayed on a 5' x 7' screen that clearly outlines the goals and objectives of her presentation. Amanda then switches to a brief video clip of a recent satellite teleconference on learning disorders. The video clip features an interview with a student struggling with a learning disability. The students are mesmerized, and are drawn into the topic as they identify with the student being interviewed. Amanda shifts technologies again, displaying a copy of the morning paper on the Elmo visual presenter, citing the dramatic rise in students identified as learning disabled in Illinois. After briefly returning to the computer graphic as a reference point in her presentation, Amanda accesses an Internet web page that contains reference and resource materials for teachers and learning disabled students. The entire class is focused and involved throughout the presentation and lively discussion she has incorporated into her lesson. After class, students linger around the electronic podium to ask questions of Amanda and to request that she post a copy of her materials on the class Web page. All in the room have been actively engaged in learning. The instructor thanks Amanda for her report and indicates she will share the ideas and resource materials with her other class as well.

Ameritech was proud to award Western Illinois University's College of Education and Human Services a $500,000 Governor's/Ameritech EdTech Grant. This grant was created to enhance the training of future and current teachers in the use of advanced telecommunications technology in the classroom. This project demonstrates Ameritech's belief that we must go beyond building the Information Superhighway and work hand-in-hand with partners to design technology applications that are beneficial to society. The EdTech project makes the learning process more meaningful by expanding the resources available to both students and teachers. Through the EdTech project, Western Illinois University is preparing Illinois teachers to help their students succeed in a technological society and competitive global marketplace.

—Doug Whitley, President
Ameritech

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Introduction

The expanding impact of communications technologies on every imaginable field throughout the past decade has prompted state-level education agencies and public schools to examine effective ways to infuse technology into the preK-12 environment. They emphasize the value of these technologies in the following ways:

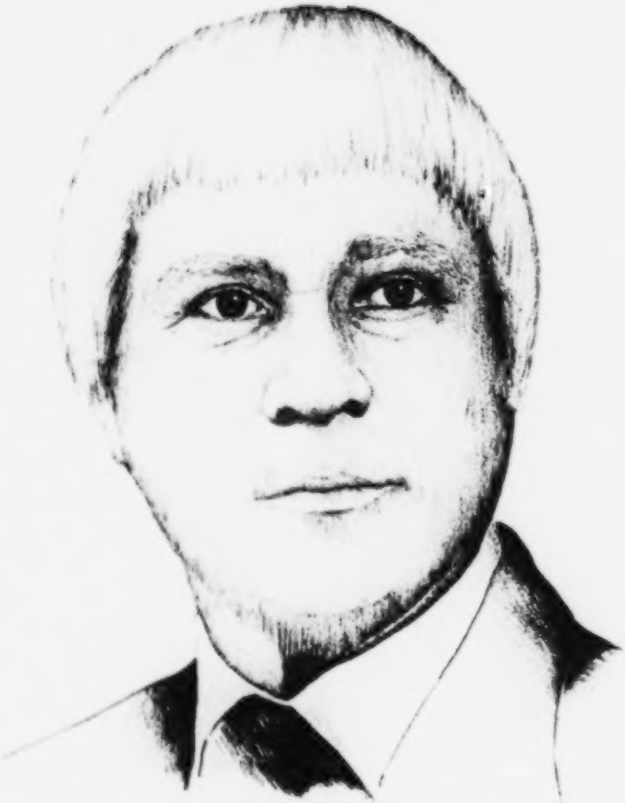
- preparing students for a future permeated with technology
- providing innovative instructional materials on curricular topics that serve a variety of student learning styles and achievement levels (e.g., CD-ROM, videodisc, videotape, software tutorials, or databases)
- serving as reference tools for students learning how to identify, locate, and evaluate the burgeoning volume of information available to them (e.g., CD-ROM encyclopedias, reference works, databases, and the Internet)
- expanding available tools for students to use in communicating ideas that draw upon the creative synergy made possible through collaborative project work (e.g., authoring, desktop publishing, electronic presentations, drawing, and digital editing of images)
- promoting collaborative problem-solving, decision-making, data-collecting, and critical thinking and writing—essential skills for the "information worker" of the future
- facilitating communication with parents and the community
- supporting the administrative functions of school districts

These expectations can only be realized if teachers have the necessary skills to review, select, and evaluate technology-based curriculum materials, if teachers understand how to integrate the new technologies and the complementary teaching and learning paradigms effectively into their classrooms, and if they have ready access to the hardware and software that can make their jobs as teachers more productive.

This entire picture has enormous implications for teacher education. If our preservice teachers are to be ready to contribute to this vision of technology-infused education, they must know about computer hardware and commercially available, technology-based curriculum materials. They must be familiar with software for assisting them with the daily work of a teacher; networks that support teacher and student work; and instructional strategies that effectively integrate technology into the curriculum and create the kind of learning environments (and complementary, new teacher roles) that promote collaborative, engaged learning. They must be given the assignments and learning experiences that will contribute efficiently, effectively, and in an appealing manner to a preservice teacher's knowledge, attitudes, and skills with technology. These activities all have to be integrated into an already crowded teacher education curriculum, led by a faculty with limited experience using technology in preK-12 classrooms.

How WIU Initially Became Involved

Since the late 1980s, leadership in the College of Education had been actively engaged in planning for and implementing the use of technology in the delivery of instruction. The Dean of the College, David Taylor, has had an interest in technology since his graduate school days and doctoral study of television instruction in the 1960s. He realized the opportunities that satellite-based interactive television technology offered a rural-based university such as Western Illinois University. After extensive investigation and debate, the University accepted the recommendation of the Dean and purchased satellite uplink equipment for the delivery of live interactive classes and inservice to schools, communities, and agencies nationwide. Occurring almost simultaneously with this decision was WIU's partnership in a



We realize that technology is not an end in itself; rather, it provides a means by which to shift the paradigm of teacher from that of teller (sage on the stage), to that of model and facilitator of active learning (guide on the side). To accomplish this paradigm shift, we have created a technology rich environment for our faculty and students to help them develop the skills and competencies essential to the lifelong learner. Underlying this effort is our firm belief that true education reform can only come about when those who actually teach push the reform from the bottom up! We believe our graduates will be strong advocates of the paradigm shift and will provide the essential push to ensure that all Illinois students will attend schools and have teachers who use technology to support active student learning.

—David Taylor, Dean
College of Education and Human Services

multistate consortium in a proposal to the first federal Star Schools grant competition to use satellite technology to meet the needs of primarily rural schools with dwindling budgets and a shortage of qualified teachers in math, science, and foreign languages. As part of the TI-IN United Star Network, which included a partnership with the Illinois State Board of Education (ISBE), the WIU/ISBE Satellite Education Network was founded in 1988 through a $1.1 million grant from the U.S. Department of Education. In its eighth year of partnership, the College received a second Star Schools Grant. The Satellite Education Network now has over 100 downlink sites in Illinois, and reaches over 2,500 preK-12 schools nationwide with student instruction and teacher inservice programming via satellite.

While satellite delivery of secondary courses not otherwise available to students in isolated rural districts achieved widespread acceptance and recognition for its contribution to access and equity issues, it quickly became evident that it takes more than hardware, software, and good programming to improve educational opportunities for students. Our experience with the public schools through the Satellite Education Network brought a quick awareness of the need to bring school personnel into the technology mainstream. Teachers and administrators had to become aware that technology was not an answer in itself: It was the *appropriate application of technology* to teaching and learning that would effectively prepare students to be productive citizens:

> **When you go to the hardware store to buy a drill, you do not actually want a drill. Instead, you want a hole. They don't sell holes at the hardware store, but they do sell drills, which are the technology to create the holes. We must not lose sight that technology, for the most part, is a tool and it should be used in applications which address educational concerns or problems. We should, therefore, focus on the appropriate application of technology rather than the tool itself. (Fletcher, 1986)**

The appropriate application of technology, however, required teachers to understand the possibilities offered by various technologies and to become competent in their implementation in the classroom. A paradigm shift was required of both teachers and administrators. Teachers could no longer view their students as passive receptacles of their knowledge. Technology provided endless opportunities for students to be active participants in their own learning. Teachers now needed to learn to be a "guide on the side, rather than a sage on the stage." They had to understand how to *use technology as a tool to facilitate engaged learning*.

And, as teacher educators, it was up to us to prepare teachers to use a variety of active, exciting, challenging, and rewarding teaching strategies as they incorporate educational technologies into their classrooms.

This paradigm shift required a restructuring of the teacher preparation program. It also meant that our College faculty needed to reject the old paradigm of teaching and testing and to accept the new paradigm of facilitating active learning in continuous lifelong experiences using a wide range of technologies and resources. All involved in teacher education had to realize that through the use of communications technology we could truly make meaningful educational changes and face the burgeoning information explosion.

This is the journey upon which we embarked in the College of Education (which became the College of Education and Human Services with WIU's restructuring in July, 1994). With the support of the Governor's/Ameritech Grant, we undertook the development of the *WIU approach to integrating technology into teacher education*. With the grant funds, we acquired the technology hardware and software to upgrade existing resources and to establish state-of-the-art technology facilities. We identified technology competencies to be completed by education majors prior to graduation and redesigned over twenty courses in the teacher education curriculum by infusing technology into course content and delivery. In addition, we developed and implemented an ongoing training and support program to encourage faculty to model the use of new technologies in their own teaching and to design hands-on technology experiences for their students. We also established a real time, two-way television linkage with Springfield Public School (SPS) District #186, located in Illinois' capital city 90 miles southwest of the WIU campus. With this link, we have been able to connect with the classrooms, students, and teachers of SPS and they with us.

Goals

WIU outlined four very specific goals for the project:

1. To assist new and practicing teachers to evaluate, select, use, and integrate communications technology instruction into a wide array of academic and vocational subjects in schools for early childhood, elementary, and secondary grade levels.

2. To assist educators to learn how to use advanced communications technologies in their own professional productivity and to enhance administrative effectiveness.

3. To develop instructional modules which contain elements of our communications technology curriculum for integration into undergraduate and graduate coursework in all content areas of teacher education.

4. To share information about the project and curriculum with other educational institutions at the elementary, secondary, and collegiate levels throughout Illinois and the nation.

Implementation of the Governor's/Ameritech EdTech Grant

Crucial Components for Institutionalizing Change

Innovation and change literature specifies factors that are required for successful implementation of any educational innovation, the majority of which hinge on the leadership of the administrator initiating the innovation and the climate in which it is introduced. The innovation must have the strong and active support of the top administrator who can provide the necessary conditions for successful implementation. Kalba and Savage (1980) stress that a motivation change agent from within an organization is needed to bring information into the organization, to develop support for the innovation, and to establish appropriate skills and resources for initially operating it. Although this responsibility can be shared by several people, it is critical that the innovator(s) come from within because such sources usually carry greater credibility and leverage with other staff members. When setting out to bring about change such as infusion of technology into a teacher education curriculum, it is imperative to realize that the process required to introduce innovation is just as important as the technology itself (Perelman, 1988).

Its also crucial that the administrator who initiates the innovation has a vision of what can be, remains actively involved, and prioritizes the innovation by modifying the system as necessary to support it. To be successful at fully integrating technology into the teacher education program, top administrators must demonstrate an understanding of the process necessary for this paradigm shift and the requirements of the acquisition of new competencies on the part of the faculty. Administration's active and ongoing involvement in the process, and enthusiasm for the results, have to be communicated to all impacted (Smith, 1993).

Strategic planning for change is essential. A democratic and actively involved administrator who has a vision, who allocates adequate financial and support resources to the innovation, and who has developed a hospitable environment for implementation of the education innovation will be likely to initiate and maintain the effective integration of technology into the teacher preparation curricula.

Implementation processes must bring those who will be most immediately impacted by the changes together in a way that provides them some ownership in the process. For effective integration of technology into our program to take place, a shift in focus from what technology is or does to what it enables educators to accomplish had to occur. A crucial first step for us was to get a number of faculty on board immediately, and to generate excitement about the curricular changes we were seeking. We invited technology-experienced and inexperienced teacher education faculty to serve on task forces to develop student technology competencies, to serve on teams with teachers from our professional development partner schools in Springfield, to "sign-on" to develop modules, and to take part in presentations and inservices on a regular basis. Before we began the process we had the technical and instructional support staff in place to facilitate the faculty's involvement.

It is crucial that faculty are part of the process, that they have a voice in what happens, as well as the opportunity to provide feedback and share with each other. They have to have the flexibility of choosing the level and timing of their involvement, and to be allowed to grow with the process. They also must have ongoing professional develop-ment and technical support.

Project Management

No grant dollars were allocated for staff time or for administration of the project. The Dean of the College of Education and Human Services served as project director, assigning specific responsibilities for the project activities and administration to College faculty and administrators as part of their inload tasks. This allowed us to use grant funds entirely for equipment and installation, software, and dissemination of the project accomplishments.

Technology Competencies for Teacher Education Majors

The redesigning of the teacher education curriculum addressed our commitment to "appropriate application of technology" to teaching and learning. It focused on a basic understanding of *instructional design* for a technology-rich environment and five technologies: *computer applications, telecommunications, distance learning, interactive multimedia,* and *instructional video.*

A task force with representatives—faculty and administrative—from each of the College's teacher education departments met on a regular basis to determine technology competencies (skills and applications) in the area of instructional design and the five major areas of technology. Selected teachers in the SPS district also provided input to the process by reviewing early drafts against their expectations of what technology skills and knowledge new teachers should have upon entering their district.

Competencies developed by the task force formed the basis for the development of 20 curricular modules integrated throughout our teacher education program. They have also stimulated a great many additional faculty to incorporate technology experiences into their courses.

Instructional Design Competencies

This group of competencies was developed because technology applications are really tools that teachers can use to enhance teaching and learning. They are not independent of identified learning objectives, student characteristics, existing curriculum, or available resources. Overall, these competencies assume that in a technology-rich environment, teachers must still employ appropriate planning and decision-making skills to identify (1) which technologies to use, (2) which instructional strategies best fit the learning problem and available resources, and (3) which methods of assessment to use to measure the desired outcomes. Therefore, the following is the list of instructional design competencies:

- Identify the advantages, limitations, and instructional applications of a variety of media and communications technologies.

- Prepare an instructional unit pertinent to one's major which takes into account the constraints of an established curriculum, the particular characteristics of a group of learners, and the availability of various types of technology as well as other resources.

- Identify resources (e.g., print publications, telecommunication sources, types of people, and physical settings) for staying current in the use of communications technologies applications in education.

- Indicate how equity, ethics, and legal issues such as copyright law and fair use principles are influencing the use of technology in educational settings.

Computer Applications Competencies

Although several other groups of competencies address computer skills (e.g., telecommunications, interactive multimedia, and instructional video), this group emphasizes skills for supporting the teacher in his or her everyday tasks of being a teacher (e.g., recordkeeping, communication with parents, planning for and preparing lessons, reviewing and creating instructional materials, and setting up equipment). Therefore, the following competencies address word processing, database, spreadsheet, graphics, and desktop publishing applications as well as software evaluation and effective utilization of computers that are housed in the classroom versus a lab. To be considered technology competent, graduating students must be able to do the following:

- Create original word processing, database, and spreadsheet documents that can be used for teaching and/or learning, for administrative applications, or for communication with parents and other community members.
- Demonstrate desktop-publishing skills by producing a newsletter that incorporates graphics and multicolumned text that could be used for school, parents, or community groups.
- Identify criteria commonly used to evaluate software, review several types of software using the criteria, and identify exemplary titles pertinent to one's major (e.g., subject matter and level of student achievement).
- Describe the advantages and disadvantages of using a computer in a classroom and in a computer lab setting with students, and describe effective educational uses of computers in both settings.
- Design a thematic unit or other curriculum-development project in which appropriate computer software is integrated effectively into the teaching/learning activities.
- Set up, operate, and explain user maintenance on a microcomputer system with its corresponding peripherals.

Telecommunications Competencies

The term "telecommunications" usually refers to any technology that allows communication across a distance such as e-mail, electronic discussion groups, electronic library searching, information searching and downloading from the World Wide Web and the Internet, and the full range of distance learning technologies. The task force chose to delineate the latter as a separate set of competencies due to their group learning approach versus the asynchronous, individual, or small group communication patterns supported by the other telecommunications technologies. The following group of competencies, then, emphasizes effective ways to use e-mail, the Internet, and other telecommunication resources to support teaching and learning in the preK-12 environment. Competencies include the following:

- Access and effectively search an electronic library catalog on a LAN or the Internet.
- Conduct a multimessage dialog with other students, professors, or professionals via e-mail. Include file transfer as part of the exchange.
- Explain how this can be accomplished using a modem when a computer is not connected directly to a network.
- Describe different types of networks (e.g., LAN, WAN, or Internet) and explain how to use them to share information. Participate in at least one joint project between groups or classes at distant sites across a network (e.g., listservs, discussion groups, bulletin boards, data sharing, or joint authoring projects).
- Select a topic of interest and use the Internet to locate public domain or shareware software, multimedia resources, on-line databases such as ERIC, commercial services such as CompuServe or America Online, and other resources of value to preK-12 teachers and students. Maintain a log of the search, describing the resources and listing the sources' Internet addresses.
- Design a thematic unit or other curriculum-development project in which telecommunications is integrated effectively into the teaching/learning activities.

Distance Learning Competencies

Due to the large number of teacher education majors (~1,600), the task force recognized the impracticality of providing every student with experience teaching on our interactive television system. However, they also knew that distance education is growing in Illinois and is likely to have a presence in the schools where our graduates will teach. Therefore, the following competencies are more knowledge-based and require little hands-on experience. They emphasize a basic understanding of how interactive television and other live distance learning technologies are being implemented in preK-12 schools in Illinois and how teachers will be involved.

- Describe the various types of distance education technologies applied in preK-12 environments (e.g., audio-conferencing, cable television, Instructional Television Fixed Service (ITFS), compressed video, satellite TV, and fiber optics) as well as their strengths and weaknesses.
- Identify effective presentation and interaction skills applied by teachers who use television as the major medium for distance education.
- Describe major distance education initiatives impacting preK-12 schools in Illinois.

Interactive Multimedia Competencies

Advancements in computer, laser, and telecommunications technologies have made it possible for teachers to acquire and use affordable interactive multimedia educational products and even develop their own. The following competencies emphasize the development of a good understanding of what multimedia is, the various types of multimedia curriculum materials that are most commonly available for preK-12 instruction, and some basic ways to customize multimedia instructional materials. Our Springfield partner school personnel felt that this group of competencies were the most important for the future!

- Describe the various types/levels of interactive multimedia.
- Demonstrate how to hook up a CD-ROM drive and videodisc player to a computer and a display device; access the content of the CD-ROM, videodisc, or other multimedia curriculum product; and project the images onto a large screen for group instruction.
- Identify common criteria often used to select and evaluate interactive multimedia for educational purposes, review several applications using the criteria, and identify some exemplary titles pertinent to one's major (e.g., hypermedia stacks, videodiscs, CD-ROMs, software).
- Describe how hypermedia is developed (for interactive multimedia instruction) and produce a simple lesson by using a hypermedia tool.
- Describe how videodiscs can be repurposed to create a lesson for a preK-12 audience and repurpose a commercial videodisc.
- Design a thematic unit or other curriculum-development project in which interactive multimedia is integrated effectively into the teaching/learning activities.

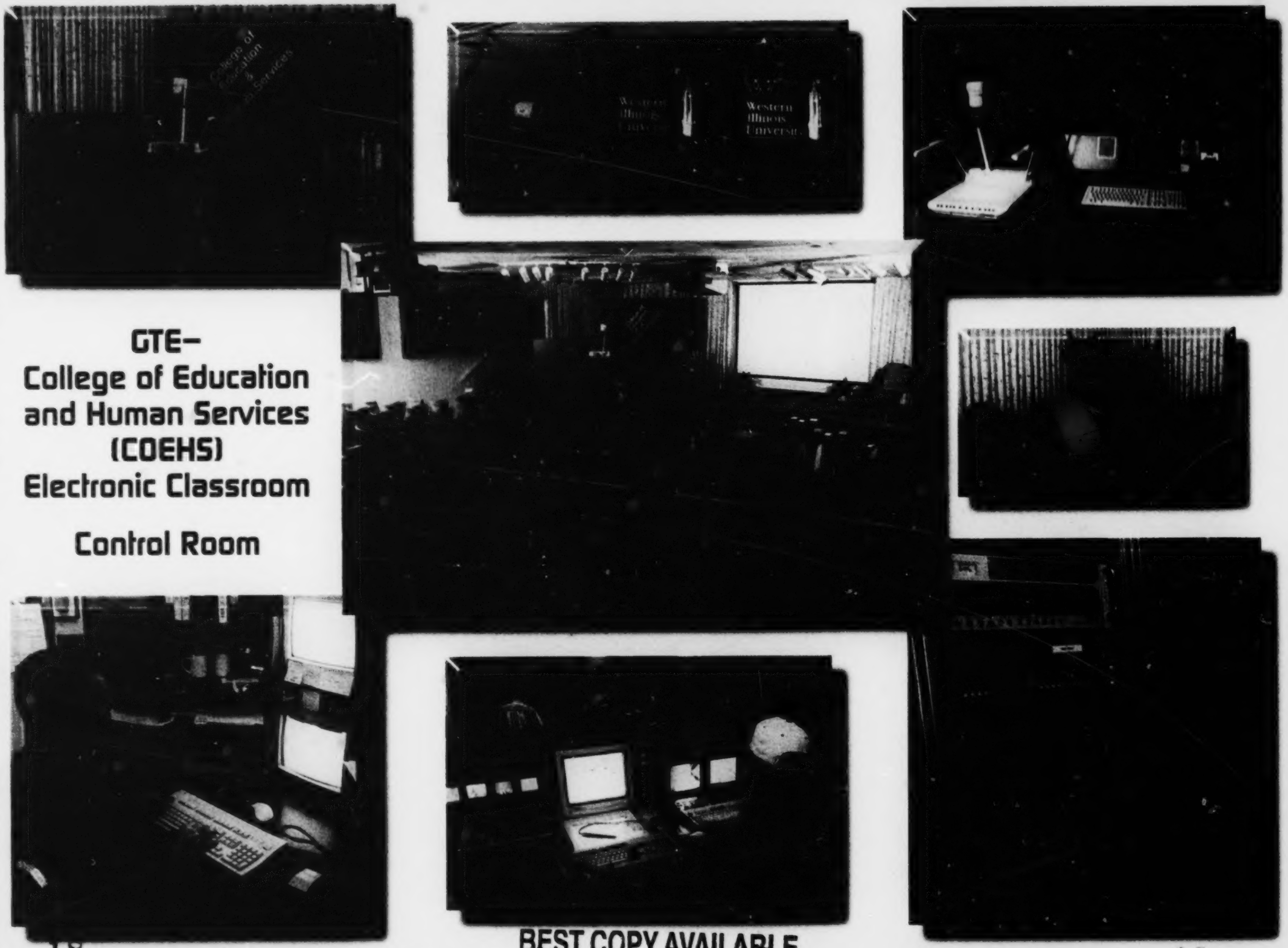
Instructional Video Competencies

Videotape technology is inexpensive and widely available in preK-12 schools. Tomorrow's teachers must be comfortable operating a VCR for playing commercial or locally produced videotapes. More importantly, they need to know how to effectively integrate a videotape into the curriculum. Also, creating instructional videos has become affordable and an activity of high interest to preK-12 students. Preservice teachers need to learn the process of video production and how to encourage it/guide it with their preK-12 students. Finally, advances in computer technology are making it possible to digitize video and other images and then create effective and appealing electronic presentations with them. Hence, the following competencies reflect these skills with videotape technology, as well as skills in digitizing images and creating electronic presentations that communicate an educational message.

- Demonstrate how to operate a VCR, and select and effectively integrate a videotape or video clip into existing preK-12 curricula.
- Produce an instructional video by
    - completing preproduction activities such as planning, scripting-writing, audio and video sequencing, and storyboarding.
    - shooting the video in teams, by operating a video camera, tripod, and microphone and using effective compositional techniques and camera movement.
    - editing the tape.
- Evaluate at least three commercially produced instructional materials (e.g., video, multimedia, print, and so on), citing effective and ineffective visual design principles that are incorporated into each.
- Create digitized video clips, photographs, and clip art components for an electronic presentation/lesson.
- Produce an electronic presentation using the components to effectively communicate an educational message.

GTE–
College of Education and Human Services (COEHS) Electronic Classroom

Control Room


College of Education & Human Services
Western Illinois University
Western Illinois University

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GTE–College of Education and Human Services (COEHS) Electronic Classroom

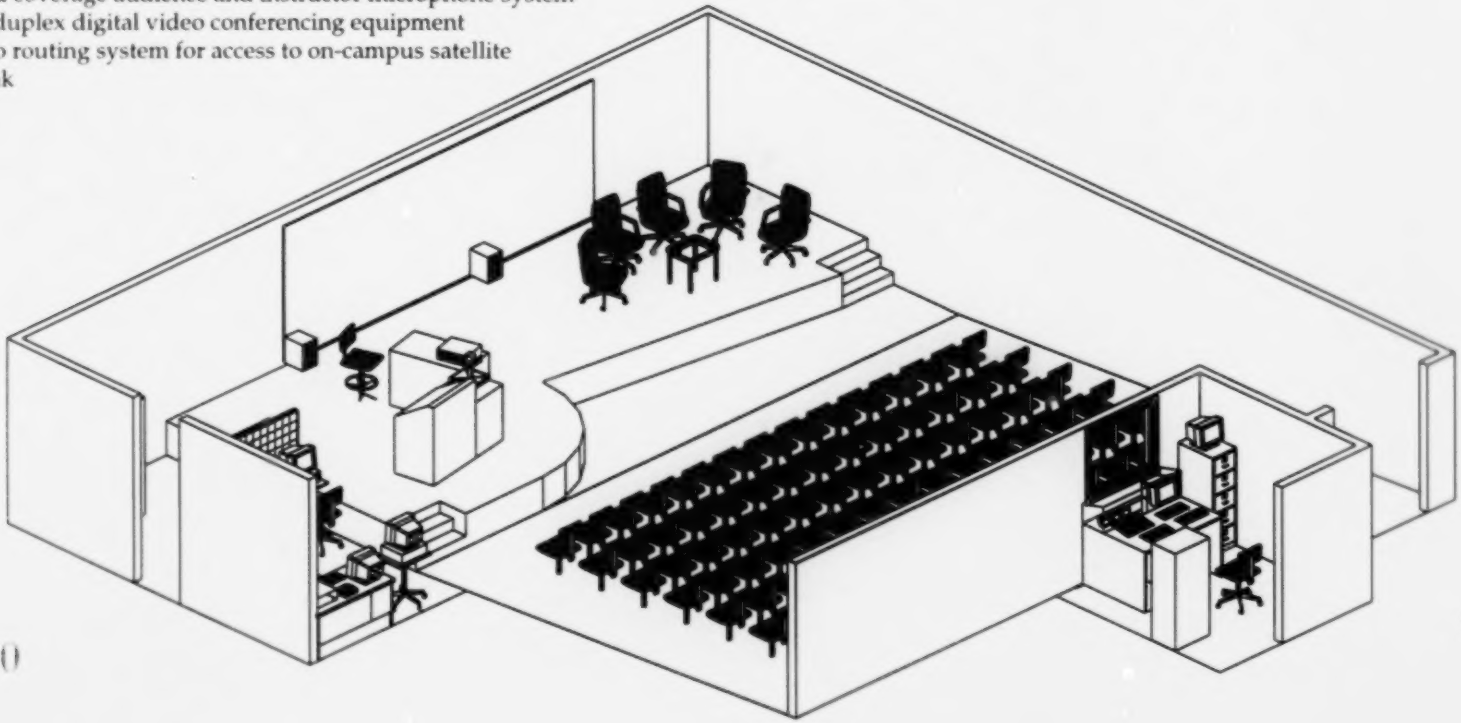
Technology-rich teaching-learning classroom with satellite and terrestrial interactive distance learning capabilities; seats up to 88 persons

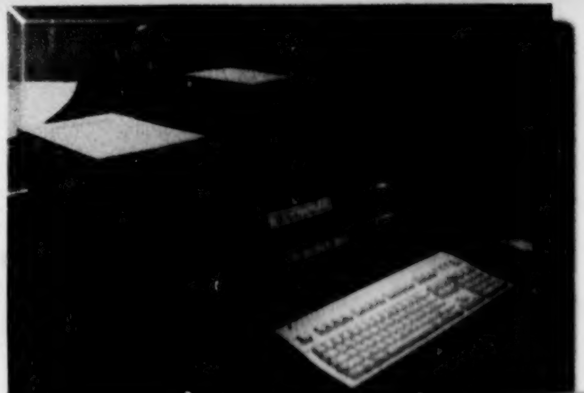
- High-quality multiscan projector
- Multiple platform computer equipment with CD-ROM drive and additional external hard drives
- High-quality VHS videocassette recorder (VCR)
- Interactive key pad response system
- Videodisc player with barcode capability
- Autofocus document camera
- High-quality projection screen (7'×20') capable of accepting a second projected image
- Custom-designed podium with "touch screen" integrated room controller

Control Room

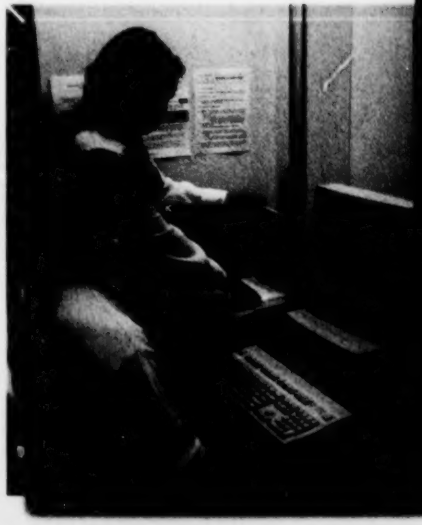
A central location where all aspects of video teleconferencing and distance learning are controlled and coordinated on and off campus

- Integrated video switcher/special effects generator
- Broad coverage audience and instructor microphone system
- Full duplex digital video conferencing equipment
- Video routing system for access to on-campus satellite uplink





College of Education and Human Services (COEHS) Faculty Instructional Development Lab (FIDL)



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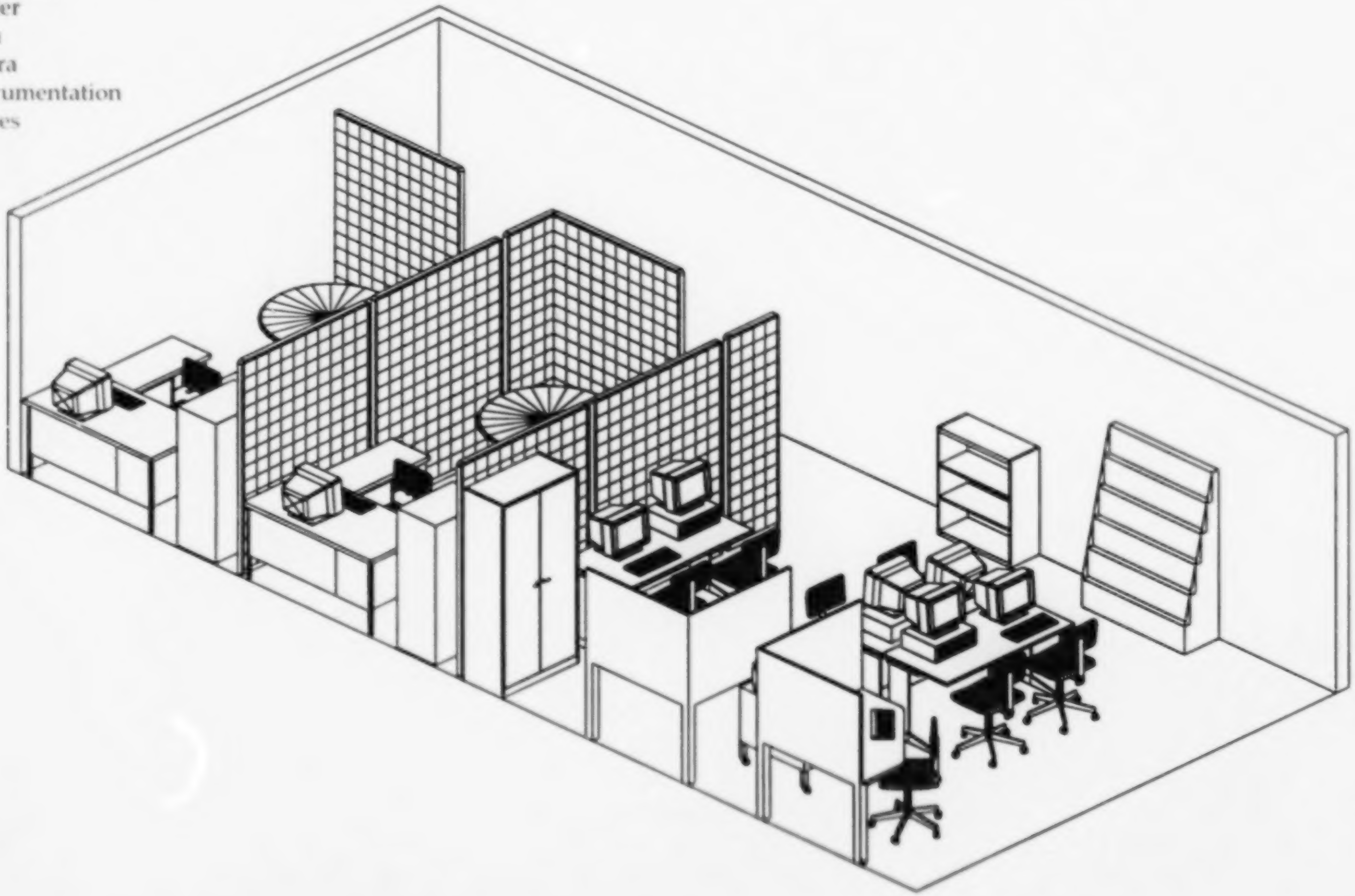
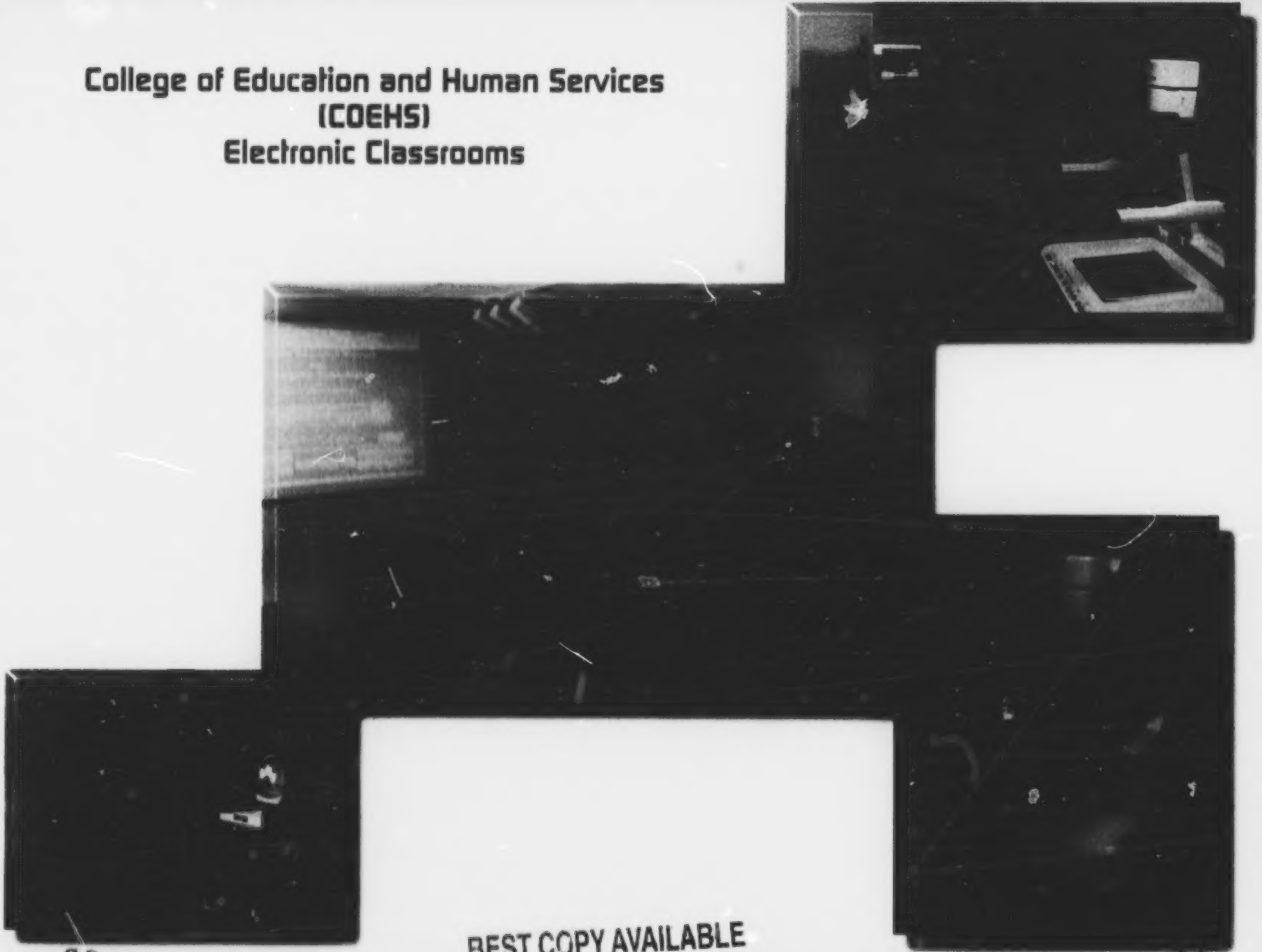
College of Education and Human Services (COEHS) Faculty Instructional Development Lab (FIDL)

A laboratory for faculty to develop technology-based instructional materials such as multimedia presentations and educational software and to receive other assistance in instructional planning for technology integration

- 5 Macintosh high-end computers with CD-ROM drives and color monitors
- Scanner
- 5 SyQuest removable hard drives
- 3 VCRs
- Videodisc player
- FlexCam camera for desktop videoconferencing
- Deskjet printer
- Videocamera
- Digital camera
- Software documentation
- Print resources



College of Education and Human Services
(COEHS)
Electronic Classrooms



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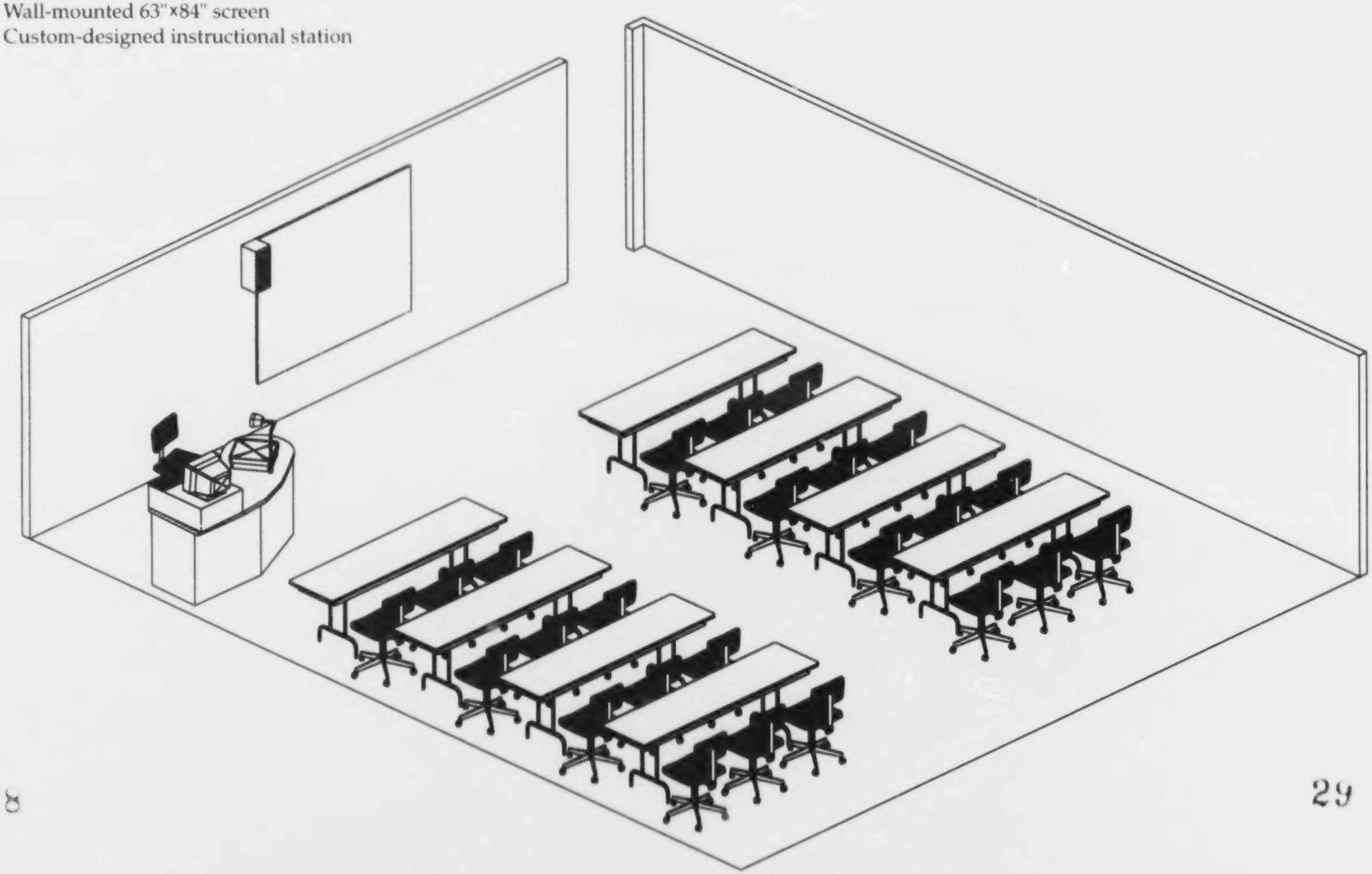
College of Education and Human Services (COEHS) Electronic Classrooms (7)

Electronic classroom with one projector for multimedia presentation/instruction

- Video projector, mounted from ceiling
- Autofocus document camera
- VCR
- High-end Macintosh computer with CD-ROM drive (dual platform, DOS/Macintosh)
- Speaker
- Wall-mounted 63"×84" screen
- Custom-designed instructional station



Ameritech Multimedia Classroom

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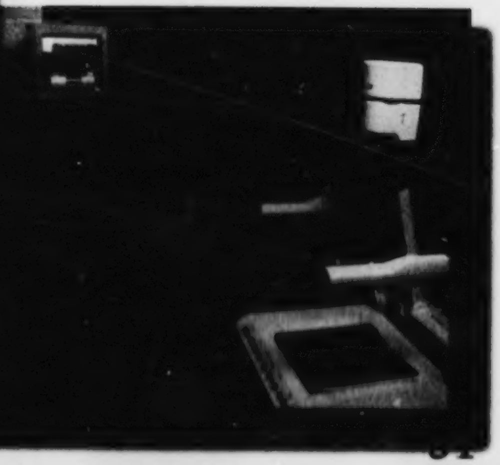

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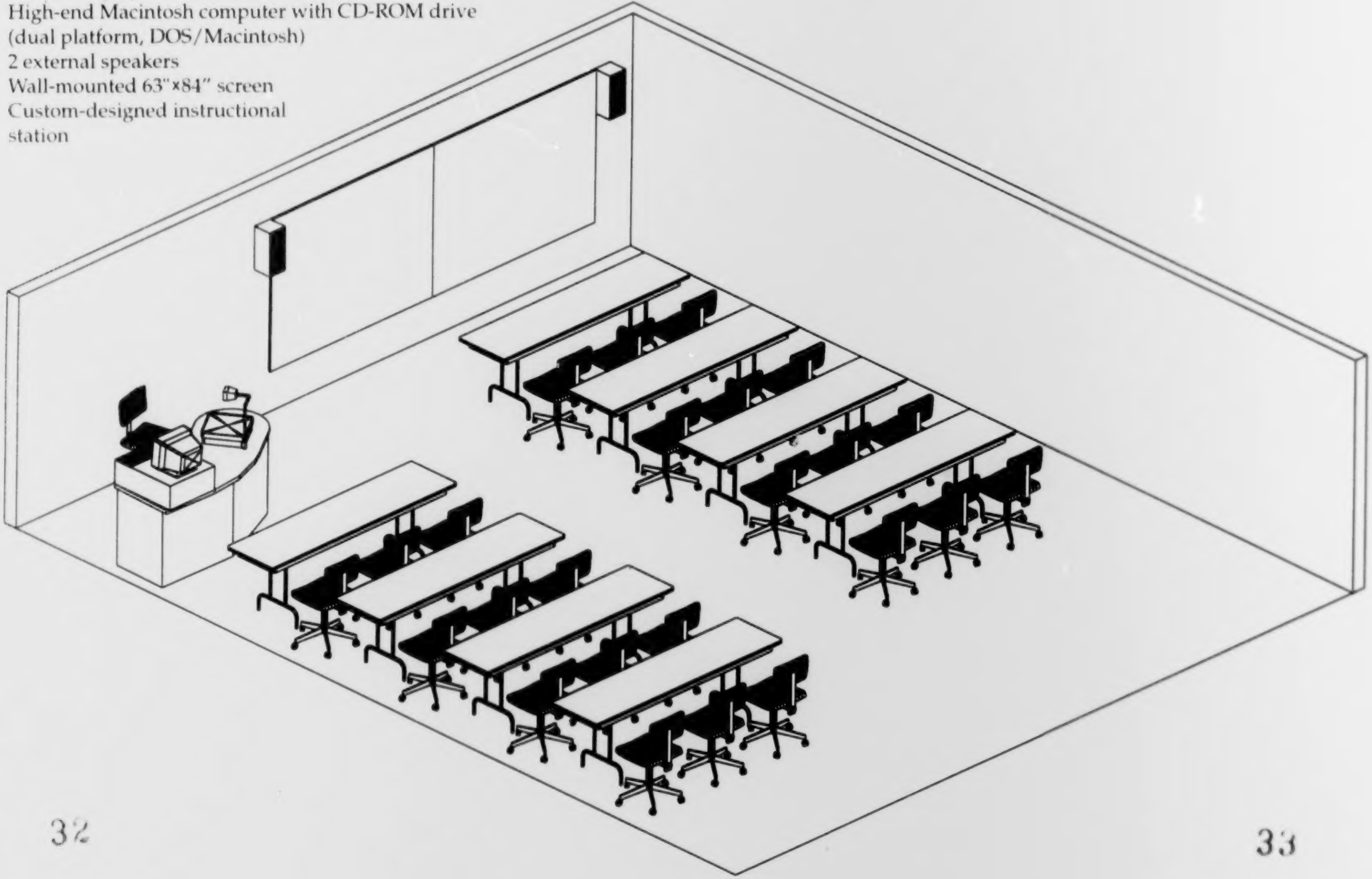
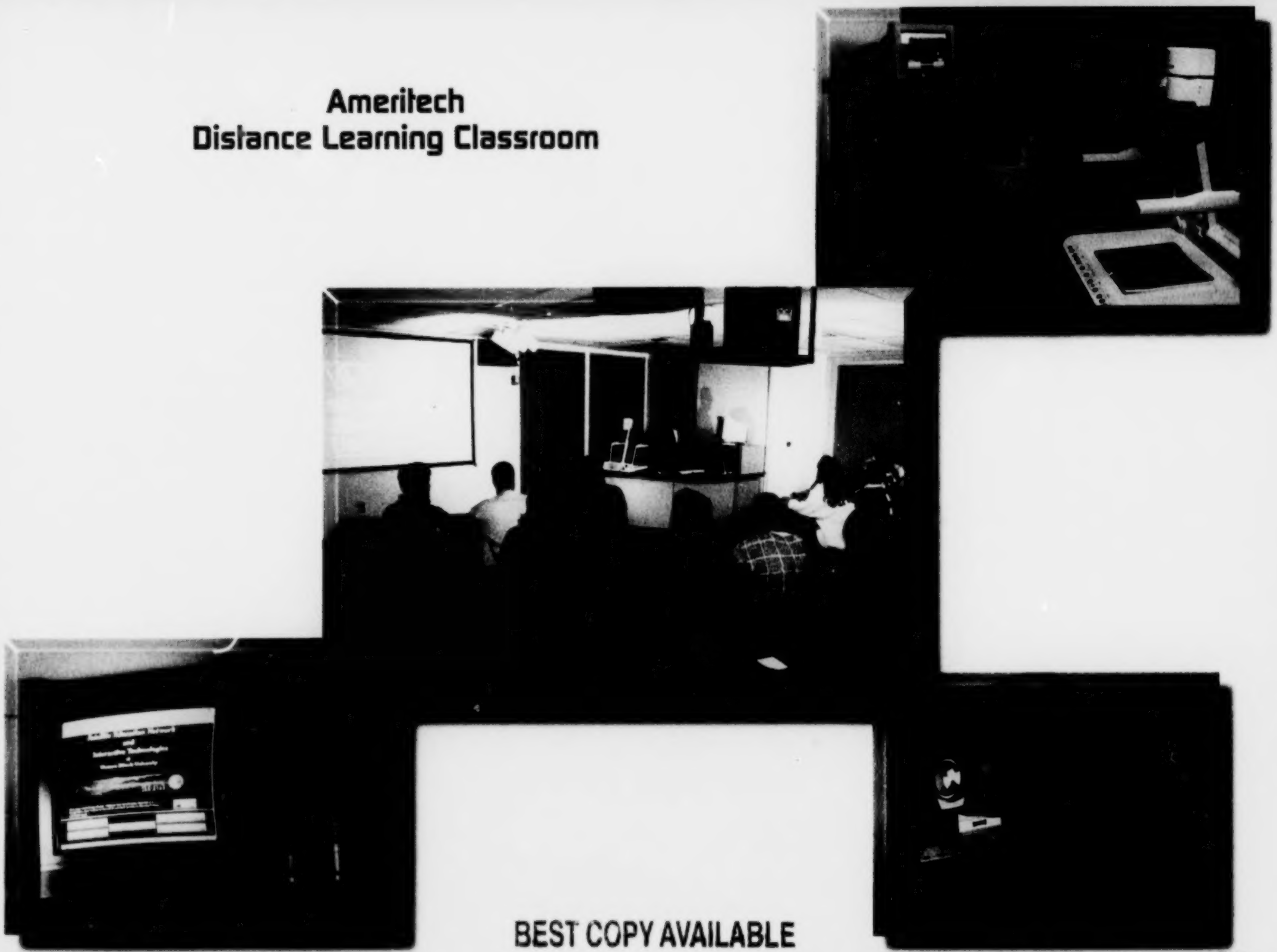
Ameritech Multimedia Classroom

Electronic classroom with two projectors for multimedia presentation/instruction

- 2 video projectors, mounted from ceiling
- Autofocus document camera
- VCR
- Videodisc player
- High-end Macintosh computer with CD-ROM drive (dual platform, DOS/Macintosh)
- 2 external speakers
- Wall-mounted 63"×84" screen
- Custom-designed instructional station



Ameritech
Distance Learning Classroom



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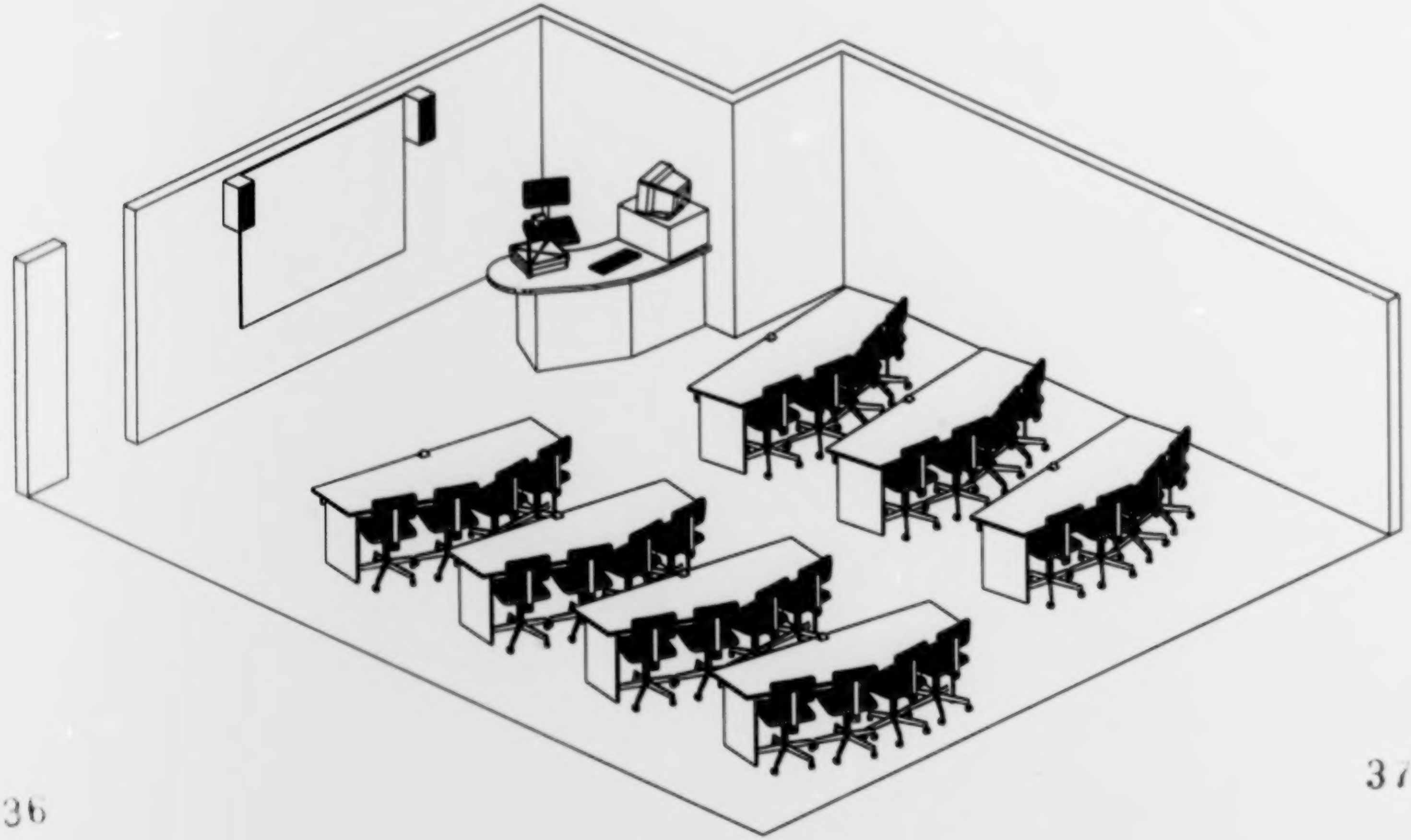
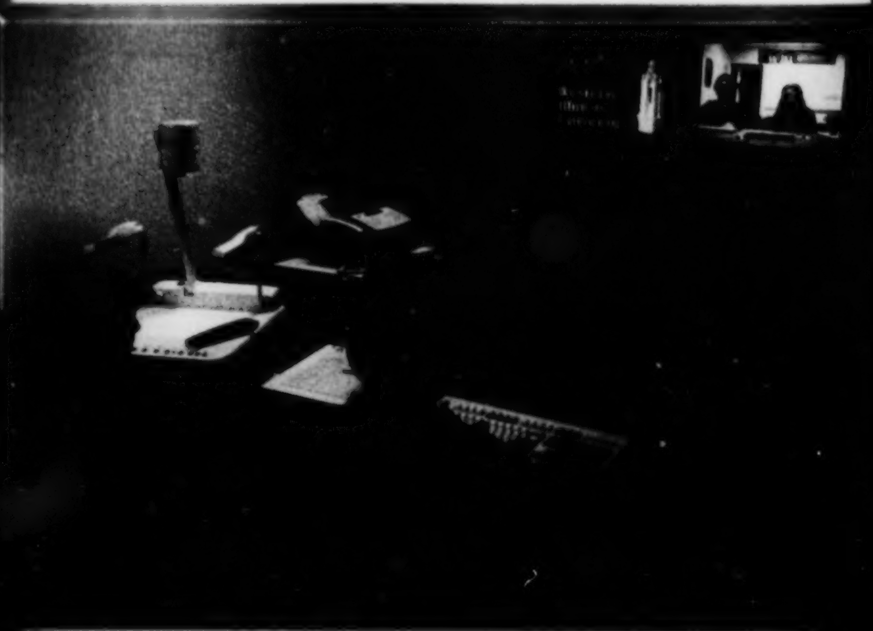
Ameritech Distance Learning Classroom

Technology-rich teaching-learning classroom with terrestrial interactive distance learning capabilities; seats up to 28 persons

- Video projector, mounted from ceiling
- Autofocus document camera
- VCR
- High-end Macintosh computer with CD-ROM drive (dual platform, DOS/Macintosh) and color monitor
- CODEC unit with control pad
- Wall-mounted 63"×84" screen
- Custom-designed instructional station



College of Education and Human Services (COEHS) Teleconference Room



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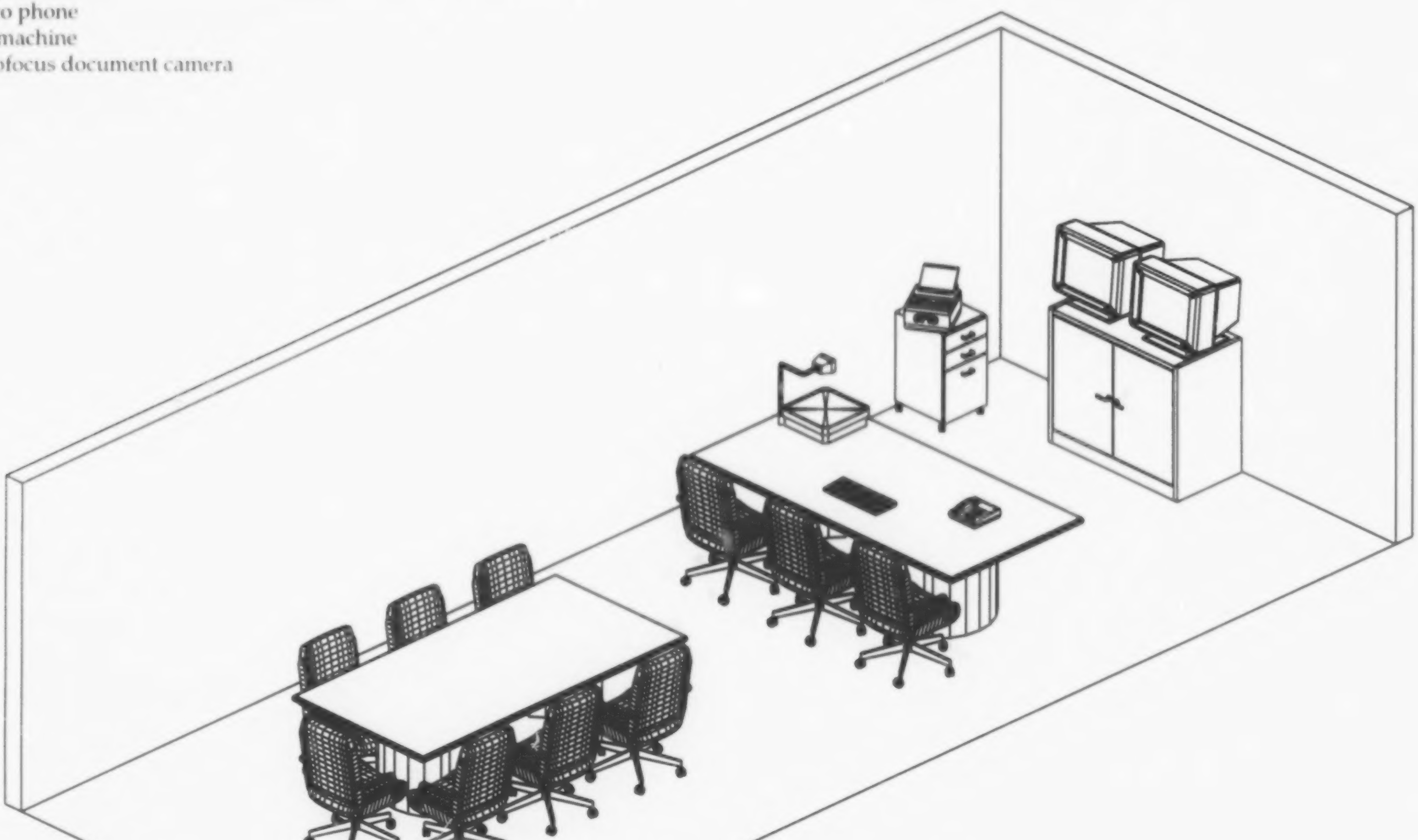
College of Education and Human Services (COEHS) Teleconference Room

Two-way interactive conferencing and distance tutoring facility

- Full duplex digital video conference system with control pad
- Telephone
- Video phone
- Fax machine
- Autofocus document camera



Interactive Multimedia Lab (IMM Lab)

Video and Sound Editing Room

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Video and Sound Editing Room

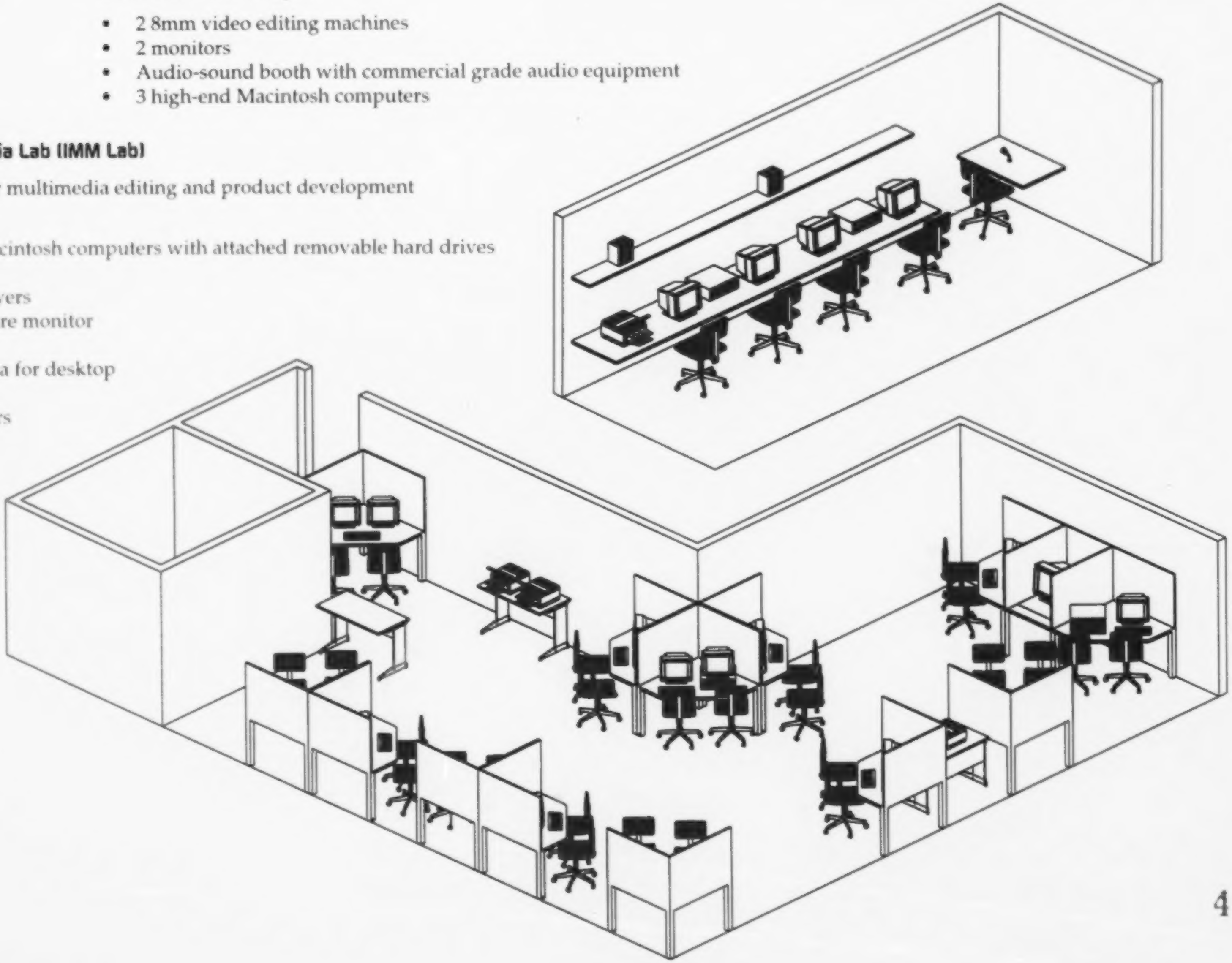
A room for editing 8mm VHS and editing/recording sound on VHS tapes for production of instructional videotapes

- 2 8mm video editing machines
- 2 monitors
- Audio-sound booth with commercial grade audio equipment
- 3 high-end Macintosh computers

Interactive Multimedia Lab (IMM Lab)

Open laboratory for multimedia editing and product development

- 4 scanners
- 11 high-end Macintosh computers with attached removable hard drives
- 3 VCRs
- 2 videodisc players
- Picture-in-picture monitor
- Speaker
- FlexCam camera for desktop conferencing
- 5 video monitors
- Server
- Laser printer
- Color inkjet printer
- CD-ROM press



Satellite Education Network
& Interactive Technologies
(SENIT)

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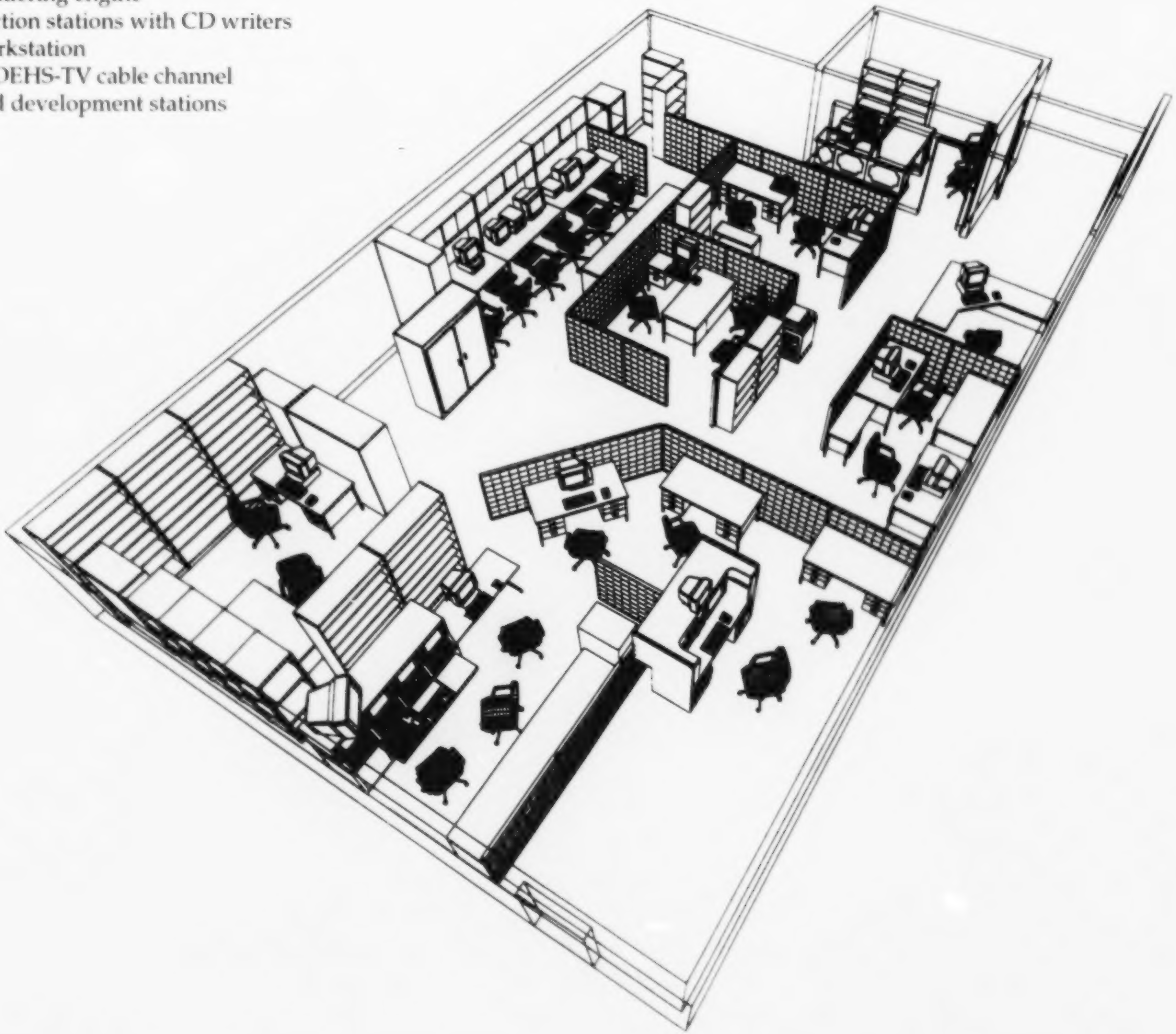
Satellite Education Network & Interactive Technologies (SENIT)

Video and multimedia production facility for the coordination of print media production, distance learning scheduling, tape duplication, and COEHS-TV

- A/B roll editing system
- Digital editing system
- 3D animation rendering engine
- CD-ROM production stations with CD writers
- Digital audio workstation
- Campus-wide COEHS-TV cable channel
- Custom-designed development stations



Technology Resources for Faculty and Students

Equipment acquisitions for the College included the following: (1) the upgrade of existing computer facilities to create an advanced computer lab with multimedia stations enabling students to preview CD-ROM educational software and videodisc courseware; (2) the establishment of an interactive multimedia lab with high-end personal computers with CD-ROM drives, videodisc players, TV monitors, scanners, a CD-ROM press, and other peripherals for interactive multimedia production and instruction; (3) the creation of seven additional electronic classrooms, equipped with a variety of advanced technologies including VTEL CODEC teleconferencing equipment, Macintosh PowerPC computers, video projectors, ELMO visual presenters, and so on; (4) the establishment of an instructional video lab which houses video camcorders available for student check-out and advanced editing equipment for student production or digital editing of educational and/or training videotapes; and (5) the establishment of a Faculty Instructional Development Lab as a resource for faculty to design and develop instructional materials for use in their classes and to receive training or assistance in developing technology integration activities for their classes as well.

Advanced Microcomputer Lab

Housed within the College is a student computer lab which has 20 Macintosh Centris 610 machines, 25 MS-DOS 486 machines, printers for both platforms, and a one gigabyte file server. Each machine is networked via an Ethernet connection for file server access and is connected to the full range of services on the Internet. Fifteen work stations have also been upgraded with CD-ROM drives, videodisc players, TV monitors, and audio headsets. These machines are used by students to review, evaluate, and repurpose interactive multimedia programs available on the server and in both CD-ROM and videodisc formats.

Interactive Multimedia Lab

An interactive multimedia laboratory was established in January 1995 with an investment of over $60,000 in equipment and furnishings to purchase 11 high-end Macintosh computers with internal CD-ROM drives (a mix of Macintosh PowerPCs, AV 650, and AV 840 machines). Peripherals include a VCR, video monitors, printers, scanners, removable hard drives, a FlexCam camera, and a CD-ROM press. Whereas upgraded work stations in the Advanced Microcomputer Lab (described earlier) are for review and some repurposing of interactive multimedia programs, the Interactive Multimedia Lab is used for creating multimedia elements and applications, including original pressing of CD-ROM discs.

New Electronic Classrooms

The GTE Electronic Classroom, established in 1992, serves as a model teaching/demonstration facility to acquaint prospective teachers with how to use advanced technologies in using a primarily presentation-mode teaching approach. The room itself seats 88 students and has audio/video outputs for either Macintosh or MS-DOS computer platforms equipped with CD-ROMs. Computer-controlled outputs are also available for a videodisc player, 35 mm slide projector, videotape player, live interactive TV programming, a document camera, and so on. Faculty use of the GTE Electronic Classroom has increased each semester to the point that it is now the most scheduled room in the College, and we have been unable to accommodate the many faculty who want to use the room and its high-tech resources.

To offset demand for use of the GTE Electronic Classroom and to support a variety of more active teaching and learning modalities, we established twelve additional electronic classrooms. While these are not nearly as elaborate (or costly) as the GTE Electronic Classroom, each enables faculty to use a variety of instructional technologies not available in traditional classrooms. These new electronic classrooms have been established in existing rooms, each capable of seating 30-40 students. To distinguish the extent of technology resources available in each room, we have designated these rooms as Level II, Level III, and Level IV rooms with the GTE Electronic Classroom identified as a Level I room. For example, the Level II room has two ceiling mounted video projectors, a document camera, a VCR player/recorder, a videodisc player, a multiplatform Macintosh/

MS-DOS/Windows computer with CD-ROM drive, and external audio speakers. A Level III room has the same equipment with the exception of only one ceiling mounted video projector and it does not have a videodisc player. A Level IV room has the same capabilities as a Level III room except that it does not have a computer. See the centerfold for a depiction of equipment items in Level I, II, III, and IV rooms. Any Level III or Level IV room could easily be upgraded to a Level II room with the addition of a few pieces of equipment. The cost for equipment items in the Level II through Level IV electronic classrooms ranges from $6,000 to $18,000, plus renovation which for us was $2,000 to $3,000 per room.

Instructional Video Laboratory

A total of $24,000 was expended to establish an Instructional Video Laboratory. This lab is for use by prospective teachers to "shoot" and edit video footage in order to create instructional video programs and/or training tapes for use in instruction. Equipment in the lab includes two editing systems and twelve high-band 8mm video cameras available for student check-out.

Faculty Instructional Development Lab

This lab has been designed solely for faculty use. It is housed separately from the Interactive Multimedia Lab and the Advanced Computer Lab so that faculty can work uninterrupted from students and/or other faculty. It is a lab where faculty can learn new software/courseware and/or create technology-based instructional materials for their classes. This lab has high-end personal computers, videodisc players, TV monitors, scanners, removable hard drives, a FlexCam camera, a digital camera, and other peripherals to permit full-range production of interactive multimedia instructional materials. This lab also houses the bulk of software/courseware used by faculty for instructional development. The College's full-time instructional designer's office adjoins the lab so she can be accessible to assist faculty in its use. The lab also serves as the focal point for a full range of hands-on faculty workshops, one-on-one instructional design assistance, multimedia development team meetings, grant writing assistance, and so on.

Professional Development School Partnership Via Distance Learning

A crucial component of our work was, and still is, feedback from the field (i.e., the public schools) regarding what competencies our graduating teacher candidates need to possess. A few years prior to the grant award, we had initiated a partnership with SPS District #186 (SPS) to further our efforts in teacher reform. SPS has placed a strong emphasis on technology integration in the classroom curriculum and has been an exemplary training resource for WIU preservice teachers and faculty. We are now in the final stages of signing formal contractual agreements with two other public school districts to further extend our professional development school partnerships.

CODEC Connections Between SPS and WIU

With monies from Ameritech, we purchased VTEL CODEC (coder/decoder) compressed television units with ceiling mounted cameras and outfitted one classroom at Lincoln Elementary School and another at Springfield High School. A similar CODEC unit in WIU's GTE Electronic Classroom connects WIU with the two schools for two-way, real time interaction in both an audio and a video format. The network operates over a mix of fiber optics and copper wire connections on a ¼ T (fractional T1) transmission rate of 384 kilobits per second. Over the network, we have offered an array of college credit courses; teacher inservice training from College faculty to SPS teachers; insights on classroom instruction from SPS faculty to WIU professors; and student enrichment in the areas of math, science, fine arts, and social studies. We have also conducted many meetings between WIU and SPS faculty and administrators.

In addition, preservice students can observe live classroom instruction by SPS teachers. Unobtrusive cameras were mounted in each of the two Springfield schools, which allow WIU students to watch and hear—at a distance—practicing teachers work with their students in actual classroom settings. This use of the system has been especially valuable for preservice teachers who wish to observe teachers working with students in classrooms which are culturally diverse and which utilize technology with active learning strategies.

We have also conducted orientation and ongoing supervisory discussions with student teachers assigned to SPS. We have "talked" with them about their student teaching experiences, and we have "met" with SPS faculty assigned to supervise WIU student teachers. In fact, College faculty interact on a routine basis with Springfield teachers and staff and with WIU student teachers via the compressed TV network.

Another use of the network has been to conduct "electronic field trips" between students in Springfield and students at other schools around the United States via an audio/video bridge. One significant connection was between Lincoln Elementary School students and students at Northridge Elementary School in California about two months after the January 1994 earthquake which rocked the Los Angeles area. The earthquake epicenter was located just a few miles from Northridge. Fifth-grade students at Northridge freely interacted with their counterparts at Lincoln Elementary School and talked about the impact of the earthquake in their lives. The students in Illinois shared their feelings about a fire that had burned portions of Lincoln School a week earlier and also talked about the devastating Mississippi River flooding in the summer of 1993.

The partnership between SPS District #186 teachers and administrators and the COEHS also impacts the graduate courses that we offered over the Western Illinois Education Consortium (WIEC) compressed video system. The teachers provide us with feedback regarding their needs and interests in electronically offered summer and fall graduate courses delivered to Springfield.

We also use the CODEC connection to provide administrative inservice such as the School Law Conference held at WIU. The Attorney General and other school law experts were able to reach not only a large group of school administrators who came to WIU for the conference, but also those who went to the Springfield High School site and two other distance sites for the event.

The results of using the two-way video technology for faculty and student teacher interaction have been overwhelmingly positive. Student teachers report that they feel "connected" to the University and to other student teachers having similar problems. The Student Teaching Program faculty were provided a method by which to make face-to-face contact with the many student teachers at distant sites. [We] were able to address questions regarding certification and other related problems immediately. Through regularly scheduled seminars over the CODEC unit, we were able to provide needed information and reinforcement on topics which the student teachers had indicated were important to them.

—Gale Castrale, Chair
Department of Educational Administration
and Supervision

Partnerships such as our professional development site partnership with Springfield Public Schools are essential to the development of a curriculum that will meet the needs of our future teachers and the schools in which they will be employed.

Distance Tutoring Program

A low-level technology link with Franklin Middle School in Springfield makes use of video telephones and facsimile machines to create a "homework hotline" for students. Four afternoons per week, immediately after school, interested students are invited to the school library to receive special tutoring from school faculty on-site. Within the library, a video telephone and a fax machine are also available for students to call into WIU on a toll-free line. Under the direction of an on-site faculty member, Franklin students can "video phone" in to WIU to ask preservice teacher education tutors in math, science, English, and social studies questions about their homework assignments. Communication is by video telephone and fax machine, thereby permitting a "personal touch" in seeing each other (video phone) and exchanging hard copy of homework/ questions via the fax machine. The purpose of the distance tutoring program is to acquaint teacher education majors with additional uses of relatively low-cost telecommunications technologies while at the same time giving them an opportunity to work with students in the public schools.

Project Management Via CODEC Connection

SPS District #186 administrators had a key and ongoing role in the management and implementation of the EdTech Grant. An advisory board was established to provide direction and guidance. Representatives from SPS District #186 and WIU were joined by business, government, and state education leaders as members of the board. Ongoing meetings of the board, both formal and informal, were held between WIU and Springfield by using the compressed video link between our two locations.

Two-way video technology greatly facilitated this partnership for the Ameritech Project. For example, in planning for the remodeling of a classroom in the high school to install the CODEC unit and cameras for two-way interaction and classroom observation from WIU, District #186's Deputy Superintendent, Springfield High School's Principal, and WIU Physical Plant supervisors were able to meet routinely using the CODEC units with the COEHS technology team and Associate Dean. They used the Elmo visual presenters at both sites to draw and refine the designs while they met. The building principals and the COEHS Associate Dean also met routinely via CODEC units to plan and implement the expanded student teaching placement plan and student teaching assignments.

Faculty Training and Support in Use of Technologies

To accomplish our goals for the project, and to fulfill our mission for the College, it was crucial that our faculty rethink their approaches to teacher preparation and their teaching philosophies. (See "Instructional Strategies for Infusing Technology Into Teaching" section on page 15.)

> **A crucial component of the project has been to provide our faculty with training and ongoing support as they develop the expertise in using the technology themselves and adapting their teaching styles to accommodate a shift to the types of instructional strategies that promote engaged learning.**

Getting cooperation from faculty to use new technologies and corresponding strategies in their courses has necessitated creating an environment conducive to change. The College administration actively sought to establish and nurture a supportive environment that offers motivation, incentives, and rewards such as released time; funding for travel; and/or recognition of such activity in the personnel decisions of promotion, tenure, and merit awards. A high priority in creating a supportive environment was, and still is, to provide technology training on a regular and ongoing basis. The College had previously made the commitment to a staff development plan focused on increasing faculty competencies with educational technologies. This plan included the reallocation of personnel positions to hire an instructional designer and technicians to provide ongoing assistance and support. A television and multimedia production team has been put together as well, over the years, through our satellite and compressed video distance delivery. They have added to the base of expertise with which we entered this initiative and continue to support faculty.

The instructional designer and one of our systems managers (technicians) have been especially critical to the training. Our systems manager offers individualized orientation/training sessions for

Faculty support activities for technology integration must be multifaceted, recognizing the diversity of technology experience and interests of the faculty. Some like workshops; others like individual lessons; others want to follow a job-aid on their own; still others just want to brainstorm ideas. What's important is to tailor faculty support to the individual needs and interests of the faculty member. When faculty can find something they can use effectively and feel good about, chances will increase that they will continue to want to learn and share their enthusiasm with their students.

—Molly Baker, Instructional Designer
College of Education and Human Services

Technology is changing the contours of teaching and learning. Information that was once available by hours or days of library searching is now available in minutes. Complex concepts are easier to understand when students can see them presented visually. The global dimensions of economic, social, environmental, and political issues are made real by electronic communication. Essential skills of writing, analyzing, organizing, problem solving, and others are sharpened through actual use of electronic media. Teachers and students are learning together how technology will reshape what it means to teach and to learn.

—Gene Miller, Professor
Elementary Education and Reading

faculty planning to use our electronic classrooms. These sessions last about 30 minutes and focus on the hardware in these high-tech rooms as well as on some of the associated software/courseware. In fact, before faculty are scheduled to use the rooms, they must complete an orientation session.

The College's instructional designer offers a full range of workshops and individual lessons for faculty each semester, covering such topics as *Electronic Presentations, Using the Internet, Using Telecommunications for Classroom Projects,* and *Distance Teaching Using Compressed Video Technology* (see the Faculty Support section for a complete listing). Workshop topics are based on faculty requests and on frequently asked questions posed by the faculty. These ongoing workshops (many of them entailing multiple sections to accommodate participants) have continued to be filled to capacity each time they are offered.

Besides workshops, the instructional designer also addresses many faculty needs through one-on-one contacts, initiating or responding to 30-50 individual contacts per week by answering questions; offering individual lessons; providing workshop follow-up assistance; brainstorming ideas for instructional applications of technology relevant to a faculty member's content area; recommending software; troubleshooting when faculty come into the Faculty Instructional Development Lab adjoining her office; assisting with technology-based conference presentation preparations; sharing/checking out print or equipment resources; and providing information needed in the grants they write, whether it be data about the technology resources available or about how to incorporate uses of technology into their project.

In addition to these support personnel, WIU faculty also receive training from their colleagues. For example, one faculty member has offered—and will repeat the offering of—a one semester hour course, *Seminar in Instructional Technology,* designed specifically to prepare postsecondary instructors for teaching via our two-way compressed TV distance learning network. Because this course is offered to an 11-site regional consortium, many community college faculty, along with the WIU faculty, have the opportunity to receive instruction from an experienced colleague in the pedagogical as well as technological aspects of distance teaching and learning.

Not all training and inservice has been provided by College personnel. Several programs have been developed and delivered by teachers and staff at Lincoln Elementary School in Springfield, Illinois. For example, in November 1993, the Director of Technology and the Instructional Technology Facilitator of the SPS District #186 offered a three-hour program for 35 faculty on the role of technology in the classroom. In early February 1995, a two and one-half hour workshop was presented by fifth and sixth grade teachers and students demonstrating how they use computers as a resource for collaborative learning projects. After a live demonstration, a half-hour video was shown, chronicling a social studies project, followed by a dialogue between College faculty at WIU and Springfield teachers discussing instructional planning, methodology, classroom management, and the assessment of collaborative learning in technology-rich teaching and learning environments.

Our faculty training and support services have been multifaceted because our technology is multifaceted and our faculty represent a wide diversity of technological expertise, interests, and teaching styles.

We have operated on the notion that training/support must be offered in modes and at times that accommodate faculty needs, interests, schedules, and disciplines. Finally, we have observed that some of our more reluctant or skeptical faculty have altered their reticence to use new technologies as they have seen the successes of their colleagues and experienced more ready access to equipment in the classrooms where they teach.

Instructional Strategies for Infusing Technology into Teaching

Classrooms employing advanced teaching strategies, yet devoid of advanced technologies, are only meeting half of the equation to improve schools. The same is true of classrooms with advanced technologies that pursue the traditional approach of a teacher-dominated learning environment without incorporating new teaching strategies.

We recognized that installing equipment in the classrooms and imposing technology competency requirements on students were not going to alone ensure that our graduates would effectively use technology in their own classrooms. We also had to assist our preservice educators in learning appropriate instructional strategies for infusing advanced technology into teaching. We had to emphasize that today's information and communications technologies have made it impossible for the teacher to be the "all knowing master" in the classroom. To be successful in implementing a technology-based curriculum model, teachers have to empower their students to take responsibility for their own learning. We focused on providing our preservice teachers with strategies to enable students to acquire knowledge in ways other than just listening chiefly to lectures or reading textbooks. These strategies optimize new technologies and informational tools and provide instructional resources beyond textbooks that expand students' opportunities to acquire new knowledge and information, evaluate it, and find ways to apply it. In short, we linked advanced technologies to advanced teaching strategies.

The WIU model recognizes that successful learners must accept increased accountability to learn on their own and be able to draw meaningful conclusions from such inquiry. Teaching and learning methods which have been identified as successful strategies for increasing student accountability include, but are not limited to, cooperative learning, electronic field trips, thematic teaching, guided inquiry, apprenticeship learning, group problem solving, and critical thinking (D'Ignazio & Shultz, 1991). We are attempting to assist our faculty in learning how to employ these strategies in their teaching so they

Use of various technologies in teaching can help improve students' learning and motivation, address individual learning styles and needs, and serve to expose students to a wider world of information and expertise. However, it is essential that we, in teacher preparation programs, demonstrate the benefits that educational technologies offer teachers in their instruction and classroom organization. We have to prepare our future teachers to select instructional strategies that are appropriate to the individual learner's needs and to the curricular outcomes desired. We also must model how we as educators have to continue to explore best practices in using technology to transform the educational process.

—J. Q. Adams, Professor
Department of Educational Foundations

are able to serve as role models for our students in using engaged instructional strategies where technology tools are accessible.

The focus is not on the technologies, but rather on the instructional techniques to utilize or support the technologies.

Cooperative Learning

Under the teacher's direction, students work in teams that are self-managed and pursue self-guided inquiry. Students are responsible for their own learning and their teammates' learning. Students rotate the role of leader and other roles. No student is supposed to know everything, but all students are encouraged to make a contribution. The instructor provides guidance or scaffolding rather than direct instruction such as access to technology-based resources for research, problem-solving, and presentation of new knowledge by the students.

Electronic Field Trips

Modern telecommunications technologies such as video telephones, facsimile machines, and computer modems permit students and teachers—at relatively low cost via use of regular telephone lines—the opportunity to speak with and view students in other parts of the nation/world, share printed and graphic materials, and search large databases for detailed information on thousands of topics. Working individually or in teams, students organize and plan electronic searches, make social contact with students in other schools and with subject matter experts, and learn social and communications skills in sharing information with others at distant locations.

Thematic Teaching

The teacher functions as a classroom leader-facilitator. Several topics of study may be combined under interdisciplinary themes such as Russia, whales, space exploration, and so on. The themes contain interdisciplinary units and apply topics to real-world problems and issues. Students work independently or in teams to gather information or develop skills on subtopics within a common classroom theme. Information gathered by individuals or teams is shared with the entire class to produce a final product. Technology resources may expand the types of information available on the theme, provide alternative creative avenues for students to share what they have learned, or enhance the problem-solving skills of the students as they explore the theme.

Guided Inquiry

The teacher teaches not by telling students facts and answers, but by posing problems, mysteries, and questions that challenge student teams or individuals to investigate topics on their own. The teacher guides the inquiry to help students identify resources (including technology-based resources), locate recent findings, and make interpretations of their own.

Apprenticeship Learning

Learning by doing is the focus of apprenticeship training. The practice is under the guidance of a teacher who challenges students to do deeper investigation into a given subject. Students learn to communicate their understanding clearly and effectively to other students, and they must "show that they know" and understand the topic under study. Technology tools such as simulations can enhance the authenticity of the tasks.

Group Problem Solving

In group problem solving, students get hands-on training by experimenting with numerous group problem-solving strategies. They might learn new verbal skills, written skills, or computer skills. The teacher constantly challenges the group with interesting problems that would be too long or too complex for any individual to solve on their own. Students learn that they are smarter, quicker, and stronger as a team than they are on their own.

Critical Thinking

In the classroom of the future, the teacher's strategy will often be to place the student in confusing, uncertain situations in which students understand only partly what is expected of them and how they are to accomplish a certain task. As students work individually and together to gather information that will help them accomplish a mutual goal, they have opportunities to participate in higher-level thinking activities and are forced to make decisions and see the outcome of their decision making. Technology resources are available to facilitate the thinking process.

As a result, students in teacher preparation classes learn these approaches at the same time they are involved in an electronic field trip, as they search an on-line database, as they interact with a CD-ROM interactive multimedia package, or while they exchange electronic mail messages with individuals across the country.

Integration of Technology and Accompanying Instructional Strategies into WIU's Teacher Education Curriculum

Core Modules

The WIU model is centered on principles of *instructional design* as they are applied using five targeted technologies: *computer technologies, telecommunications, distance learning, interactive multimedia,* and *instructional video.* Basic skills in using these technologies are introduced in two classes offered by the Department of Instructional Technology and Telecommunications: ITT 223, "Educational Microcomputing and Technology" and ITT 233, "Production of Instructional Materials." Core technology competencies are imbedded in these two courses which provide students with (1) skills in "how to use" each of the specific technologies, and (2) knowledge about how specific instructional strategies can be used to properly integrate the technology into teaching. At this time, both courses are taken by nearly all elementary education and special education majors, and they serve as electives for other preservice teachers. The six core modules are as follow:

1. Using the Computer To Enhance Teacher Productivity
2. Telecommunications for the K-12 Classroom
3. Distance Education in the K-12 Classroom
4. Interactive Multimedia for the Classroom
5. Instructional Video Production for the K-12 Classroom
6. Planning for Effective Technology Integration

For a more complete description, see the "Summary of Modules" section on the following page or the full text in each module booklet in the "Tools for Teaching with Technology" package.

Content-Based Modules

Besides the ITT 223 and ITT 233 courses, a number of teacher education courses have been redesigned to include technology-based units of instruction (modules) for the Elementary Education and Reading, Special Education, Educational Foundations, and Instructional Technology and Telecommunications departments as well as one that was created for an interdisciplinary vocational education methods course for secondary education students. Over 25 faculty, with guidance from our instructional designer, developed technology units for their classes. The content-based modules developed to date include the following:

- Technology Applications in the K-8 Science Classroom
- Teaching Social Studies with Historic Landmarks
- Electronic Resources for Teaching Secondary Social Studies
- Integrating Technology into Early Childhood Thematic Teaching
- Using Technology To Enhance Parent/ Community Involvement
- Producing and Integrating Instructional Video
- Early Childhood Behavioral Assessment
- Exploring Planning Approaches for Teaching Thematically
- Your First Trip on the Internet
- Using Video To Enhance Understanding of Human Growth and Development
- Electronic Searching for Children's Literature Resources
- Microteaching, Reflective Processing, and Video: A Metacognitive Twist

For a more complete description, see the "Summary of Modules" section on the following page or the full text in each module booklet in the "Tools for Teaching with Technology" package.

In addition, dozens of other faculty are using technology in their teaching or are expecting students to include technology-based activities as a part of their course assignments.

The goals of these technology infusion efforts are to have faculty model specific instructional strategies (e.g., electronic field trips, guided inquiry, cooperative learning, and so on) that optimize the use of technology resources and provide hands-on experience for the students as much as possible. As a result, students learn new instructional methods at the same time they are involved in using the technologies.

In short, preservice teachers can only learn to use the new technologies if they have a chance to work directly with those technologies as they learn both the subject content and an appropriate methodology for teaching that content. The best way to guarantee that students will have such opportunities is to assure that College faculty themselves have the skills to use the technologies in their own teaching, model those skills regularly in the classroom, and incorporate authentic technology experiences for their students into the class process.

Summary of Modules

Sample curriculum redesign efforts by departments in the College's teacher education program include the following modules. (For more detailed information about the modules, see the individual module booklets in the "Tools for Teaching with Technology" package.)

Core Modules

Using the Computer To Enhance Teacher Productivity

Overall, the emphasis is on how to use a computer to increase productivity for teachers through the use of word processing, databases, spreadsheets, graphics, software evaluation, and instructional materials development, and integrate its use into the everyday functioning of the classroom/ learning process.

Telecommunications for the K-12 Classroom

The emphasis for this module is placed on how to use various telecommunications networks to support teaching and learning activities, specifically e-mail, for collaborative work; listserv discussion groups; and World Wide Web/Internet browsers for locating teaching and learning resources.

Distance Education in the K-12 Classroom

This module focuses on introducing students to a range of distance education delivery systems available throughout the country, what is happening with distance education in the public schools of Illinois, and what is known about effective teaching on interactive television systems.

Interactive Multimedia for the Classroom

Overall, the emphasis is on what interactive multimedia is, the types of multimedia curriculum materials available to preK-12 classrooms, and some basic ways to create or customize hypertext instructional materials.

Instructional Video Production for the K-12 Classroom

This module focuses on learning preproduction, production, and postproduction skills when creating a student-produced educational video relating to specific instructional objectives. Discussion also addresses using the process when working with preK-12 students who are producing their own videos.

Planning for Effective Technology Integration

This module presents a systematic procedure for the development of instruction or training. Students develop skills in eight areas of instructional development: (1) identifying an instructional problem, (2) analyzing the learning style of the students, (3) establishing tasks and timelines, (4) writing objectives, (5) specifying the instructional and learning methods, (6) choosing the instructional media that will best affect the instruction and learning, (7) evaluating the effectiveness of the instruction, and (8) developing plans to fine-tune the instruction.

Content-Based Modules

Technology Applications in the K-8 Science Classroom

The technology applications included in this module are computer software, CD-ROM databases, and videodisc technology. The module is designed to allow students to utilize representative software and video technologies from Earth science, environmental science, biology, and physical science. The software, CD-ROMs, and videodisc selections are further representative of social science, mathematics, language arts, and reading curricula. This allows us to not only integrate technology with science, but also with the other typical settings for learning in K-8 settings. The following are the types of interactive technology focused on in this module:

- *Direct instruction software* such as tutorials that serve to introduce procedures for laboratory experiments or techniques to be used in more complex problem-solving activities

- *Exploratory* software, including simulations and games, that encourage problem-solving strategy development and allow students to work with naturally occurring events that might otherwise be too lengthy, too remote, or too dangerous

- *Tool-Use* software such as databases, spreadsheets, and word processing programs, as well as tool-use hardware that allows students to use the computer as a laboratory tool to measure such things as light, temperature, sound, pH, and so on

Teaching Social Studies with Historic Landmarks

This module engages students in the exploration of a community's heritage within a national context. Student groups in an elementary social studies methods class are paired with similar student groups at another institution. The overall task for each group is to develop a unit plan built upon the local history/heritage of their location. Students must collaborate across distances to complete the assigned unit as well as use multiple media to exchange information gleaned from their research of local history/geography.

Electronic Resources for Teaching Secondary Social Studies

Using a Web browser, students access the Internet to complete the following activities for this assignment:

- Find and print out a lesson that they can adapt for their own teaching.
- Give the source (electronic address) and a brief description of one Internet site or file in eight different categories of information.
- Identify the site or file they have found that appears to be the most useful for their teaching and explain how they might use the information from this resource in their teaching.

Integrating Technology into Early Childhood Thematic Teaching

As students learn to design developmentally appropriate thematic units for teaching preschool-age children, they must select and evaluate various technological tools and multimedia/software products. Then, they must find effective ways to integrate them into their thematic study.

Using Technology To Enhance Parent/Community Involvement

This module includes key home-school communication and community involvement characteristics with emphasis on the role of the teacher in establishing frequent, clear, and two-way communications between home and school. Home-school communication and community involvement strategies include development of newsletters and other forms of parent letters, use of videotapes, and the creation of computerized databases for volunteers and community resources.

Producing and Integrating Instructional Video

The goal of this instructional video module is to introduce students to the use of video in the special education classroom. This will be accomplished as the teachers use video as a teaching technique during class lessons. Following a demonstration of video technology, students are required to produce a video in collaborative groups to enhance course assignments.

Early Childhood Behavioral Assessment

This module provides experience in using the *Learner Profile* software program and the Apple Newton Personal Digital Assistant (PDA) for observational assessment. With *Learner Profile*, students are introduced to an assessment tool that enables teachers to plan, organize, and review observations about children's progress and the work they produce.

Exploring Planning Approaches for Teaching Thematically

Thematic studies integrate learning across the curriculum and introduce students to significant topics of interest through both literature and informational texts. This module presents, via a hypermedia software application, how teachers develop thematic studies in four classroom contexts: a third-grade student-centered classroom, a fifth-grade social studies unit, a high school literature course, and a K-5 elementary school. Preservice teachers approach developing a thematic study from a variety of directions as they address six aspects of the planning process: Finding a Focus, Exploring the Topic, Finding Materials, Determining Learning Objectives, Developing Learning Opportunities, and Making Age-Appropriate Adaptations. Each teacher also solves a potential problem related to the development of a thematic study.

Your First Trip on the Internet

This module is constantly changing because the Internet and the programs used on the Internet are constantly changing. This module is now based on the Netscape browser and Eudora e-mail programs available to the students at the University. This introduction to the Internet quickly covers the various features available to users. Students are expected to incorporate the resources available on the Internet in completing a unit plan outside of class for a vocational education methods class.

Using Video To Enhance Understanding of Human Growth and Development

Video vignettes reveal students in classrooms demonstrating stages of social and cognitive development. The videos are used to promote classroom discussion and provide additional exposure to preservice teachers of child behavior. Some of the vignettes are also augmented with interactive television between preservice students and the videotaped classrooms. Finally, students share their observations with the instructor via e-mail.

Electronic Searching for Children's Literature Resources

Using *Elementary School Library Collection* (19th edition) in CD-ROM format and appropriate print resources, students compile a bibliography of children's books on an assigned topic.

Microteaching, Reflective Processing, and Video: A Metacognitive Twist

"Microteaching, Reflective Processing, and Video" was designed to assist novice teachers in weaving two strands of knowledge—content and pedagogical—into a coherent fabric (Shulman, 1986). A "loom" metaphor was used to describe how technology (video, specifically) serves as a tool for preservice teachers to begin the processes of (1) reflecting on their own teaching of a segment of educational psychology course content (microteaching), as well as (2) observing teaching by members of their cohort. Thus, students view practice and course content from several perspectives—their own, that of the instructor, and those of their peers. And they gain experience using technology when doing their microteaching and as they record it with a videocamera and review it with a VCR.

These modules, then, represent WIU's efforts to date in integrating technology experiences and complementary instructional strategies throughout our teacher education curriculum. Guided by the technology competencies, our faculty and support staff continue to work together towards expanding and updating this systemic approach to infusing technology skills and appropriate instructional strategies into the teacher education program at WIU. We have learned a great deal about how to do this successfully, and share some of the major insights or "lessons learned" in the next section.

During my four years at Western as an undergraduate and graduate student, I was exposed to a wide range of technology applications in education. I had the opportunity to use the state-of-the-art multimedia production facilities where I produced interactive multimedia CD-ROMs which I presented with faculty at national and international conferences. The personal attention and support I received from the faculty in the Department of Instructional Technology and Telecommunications were major factors in my academic success. As a result of my experiences at Western, my applications to doctoral programs in Instructional Technology were accepted by four different institutions, two of which offered me graduate assistantships. I have chosen to attend Arizona State.

—Charalambos Vrasidas, Graduate Student
Department of Instructional Technology
and Telecommunications

Summary and Conclusions

Lessons Learned

The task of fully integrating technology into the College's teacher preparation program has been an ongoing activity for the past several years. While state-appropriated dollars have been used to place personal computers in faculty offices and to upgrade facilities, external grants such as the EdTech Grant have provided the bulk of funding for many of our initiatives. Through these efforts we have learned some valuable lessons that are applicable to any teacher education program in the process of integrating technology into the curricula. These lessons include the following:

- *Provide faculty with the equipment and laboratory facilities that they will need to use technology as tools of their profession.*
  We have provided all teacher education faculty with computers on their desks which are Ethernet connected to access software programs on a number of file servers on campus. Furthermore, all personal computers are linked for internal e-mail and can connect to the Internet for external e-mail and the many services available on the Internet. Also, the establishment of the Faculty Instructional Development Lab has given faculty a facility, away from interruption, where they can learn new software/courseware, design instructional materials for use in the College's electronic classrooms, and receive assistance with course design that incorporates some of the new instructional strategies described earlier.

- *Have a team of qualified personnel in place who not only have a good grasp of technology and its applications for teaching and learning, but also understand correct principles of instructional design and teacher pedagogy.*
  We have a full-time instructional designer on staff and a technology support team of 15 personnel in the Satellite Education Network and Interactive Technologies unit in the College. Creating positions for technical staff has been achieved chiefly through external grant dollars as well as through the reallocation of some personnel dollars resulting from faculty/staff attrition.

- *Communicate regularly with faculty and administrators in the professional development school partnership.*
  Due to the 90 mile one-way distance between Springfield Public School District #186 and the WIU campus, most of our contact has been through two-way video conferencing. These conferences have been held to plan, coordinate, and follow-through on program-related activities. SPS teachers have also provided input to our technology competencies, have delivered inservice training to College faculty, and worked closely with selected College faculty to discuss supervision of student teachers.

- *Communicate activities and ongoing plans with teacher education faculty.*
  In the development and design of our technology facilities, a collegewide Technology Committee was organized to decide on equipment needs, facility design, software/courseware titles, and so on. In addition to working with a designated committee, it is also important to send regular communiqués (e.g., newsletters, e-mail messages) to other faculty so that all are kept abreast of developments and have opportunity for input.

- *Involve faculty in relevant aspects of decision making.*
  Faculty participation in identifying technology competencies and in the writing of new curricula for technology infusion has been crucial. These efforts were directed by our instructional designer with assistance from College administrators. As appropriate, faculty have been given load release for curriculum development.

- *Plan and budget for electrical wiring, networking, and room remodeling when establishing new facilities for technology.*
  Our building is over 30 years old, so the infrastructure for today's advanced networking and wiring was not in place. In each of our labs, we had to re-wire; network; and, in some cases, do considerable remodeling to assure that technology use would be optimized. In each case, the costs to upgrade the old infrastructure exceeded our estimates. Furthermore, we had to coordinate with University Physical Plant personnel well in advance of desired start-up dates to make sure that room renovations would be ready for equipment installation and classroom instruction when needed.

- *Commit sufficient dollars to educational software and courseware.*
  Equipment has clearly been the most costly consideration in our effort to infuse technology into the teacher education curriculum. At the same time, however, we have budgeted a sizable dollar amount each year to purchase new software/courseware for faculty and student use.

- *Make sure that training is sufficient to assist faculty in applying the technology.*
  Since many of our faculty lacked training in use of advanced technologies for instruction, we rely heavily on our instructional designer to schedule faculty workshops each semester as well as to offer one-on-one tutoring. Also, we recognize that technology applications are evolving rapidly and that constant retraining is required in order to keep current.

- *Provide visionary leadership.*
  The majority of preK-12 schools in our service area do not currently have all the technologies in place which we are now integrating into the curriculum of our teacher preparation program. A few members of our faculty have argued that we should prepare new teachers to use the old technologies which presently exist in many of the schools (e.g., 16mm projectors, opaque projectors, Apple IIe computers, and IBM Jr. computers). The argument was made that exposing preservice teachers to advanced technologies would only discourage them when they were hired in area schools and observed how far behind many of the schools actually are. We determined that we could either be leaders in the field or we could be followers. We chose to be leaders and to clearly articulate to College faculty the direction we were going. Furthermore, we believe that technology-literate teachers entering the schools will act as technological change agents in moving schools forward.

- *Hire new faculty who already have a good foundation in technology as an instructional resource or who demonstrate an aptitude and a desire to use advanced technologies as a regular part of their teaching.*
  From the beginning, we have recognized that some of our senior faculty might be reluctant to learn new skills and methods. While most have embraced our agenda and performed admirably, a few have not. As these individuals retire, we will replace them with professors who share our vision and the skills to achieve it.

- *Recognize that investing in technology is not a one-time purchase.*
  The half-life of much of today's computer-based technologies is maddeningly short. Today's innovation can easily become tomorrow's anachronism. A resolve to keep up-to-date requires foresight in planning and an ongoing dollar commitment to continually upgrade technologies.

A project of this magnitude requires a great amount of collaborative effort. Our success has been due in large part to key players who worked effectively together, knew the right questions to ask, and sought advice from experts when we were uncertain of the exact direction we wanted to take.

—Bruce Barker, Chair
Department of Instructional Technology
and Telecommunications

Conclusion

The College of Education and Human Services views infusing technology into teacher education as a priority in preparing new teachers who are entering the profession. It is fully recognized that most public schools do not have information and communications technology resources or trained staff in the areas we are emphasizing. We believe that a new cadre of teachers who are technology literate and confident—both in terms of how to use technologies and also in how to employ appropriate teaching strategies for their implementation—will be the catalyst for improving American education. These teachers will be the change agents in helping to move our public school system into the information and communications age.

New and developing instructional technologies will continue to bombard the educational marketplace. This is occurring at a time when some teachers are still trying to cope with the introduction of the microcomputer. The thought of incorporating videodisc technology, CD-ROMs, electronic mail, telecommunications, video imaging, distance learning, and the Internet must seem mind boggling to many. Certainly, the challenge is not a simple one. Yet, if those who administer teacher education programs fail to incorporate modern technology as part of the preparation process for tomorrow's teachers, and if educators in general fail to integrate modern and evolving technology in American classrooms, the education provided in our schools will have limited meaning in the lives of our students.

Reform and improvement efforts in American education begin with the premise that our schools, designed in the industrial age, do not meet the needs of today's information-based society. The task facing today's teachers is to prepare young people for *their* future, not *our* past. The U.S. Office of Technology Assessment's epic study *Power On! New Technologies for Teaching and Learning* (U.S. Congress, 1988) suggests that the new tools of the information and communications age can be pivotal in shaping the American classroom to fit and adapt to its ever-changing environment:

[A]lthough new interactive technologies cannot alone solve the problems of American education, they have already contributed to important improvements in learning. These tools can play an even greater role in advancing the substance and process of education, both by helping children acquire basic skills and by endowing them with more sophisticated skills so they can acquire and apply knowledge over their lifetimes.

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Resources

The entire toolkit, *Tools for Teaching with Technology,* is available from

Curriculum Publications Clearinghouse
Western Illinois University
1 University Circle
Macomb, IL 61455
(800) 322-3905
CPC@wiu.edu
http://www.wiu.edu/users/micpc/index.html

For information about WIU's undergraduate and graduate degree programs in Instructional Technology and Telecommunications or to discuss the instructional technology inservice opportunities for teachers and administrators, contact

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Preservice Technology Competencies

Important

The "Preservice Technology Competencies" identify the targeted technology-related skills and knowledge that WIU's teacher education program incorporates into its curriculum. They were developed by a group of faculty, administrators, and technology support personnel. Competencies that begin with "describe," "identify," or "explain" imply an awareness of a technology application only, where very little hands-on experience is expected. Such competencies can be measured through written tests, student presentations, papers, and so on. Other verbs require the production of a product, a lesson plan, or some other tangible evidence of a skill.

Computer Technologies

Although other groups of competencies address computer skills as well (i.e., Telecommunications, Interactive Multimedia, Instructional Video), this group emphasizes skills for supporting the teacher in his or her everyday tasks of being a teacher (e.g., recordkeeping, communication with parents, planning and preparing lessons, reviewing and creating instructional materials, setting up equipment).

Comp 1	Create original word-processing, spreadsheet, and database documents that can be used for teaching and/or learning, administrative applications, or communication with parents and other community members.
Comp 2	Demonstrate desktop-publishing skills by producing a newsletter that incorporates graphics and multicolumned text that could be used for school, parent, or community groups.
Comp 3	Identify criteria commonly used to evaluate software, review several types of software using the criteria, and identify exemplary titles pertinent to one's major (e.g., subject matter or level of student achievement such as gifted or LD).
Comp 4	Describe the advantages and disadvantages of using a computer in a classroom and in a computer lab setting with students. Describe effective educational uses of computers in both settings.
Comp 5	Design a thematic unit or other curriculum development project in which appropriate computer software is integrated effectively into the teaching/learning activities.

Comp 6 Set up, operate, and explain user maintenance on a microcomputer system with its corresponding peripherals.

Telecommunications

This group of competencies emphasizes individual or small group and asynchronous communication via e-mail and electronic discussion groups. It also highlights the use of the Internet and other telecommunications resources that support teaching and learning in the Pre-K–12 environment.

Tele 1 Access and effectively search an electronic library catalog on a LAN or the Internet.

Tele 2 Conduct a multimessage dialog with other students, professors, or professionals via e-mail. Include file transfer as part of the exchange. Explain how this can be accomplished using a modem when a computer is not connected directly to a network.

Tele 3 Describe different types of networks (e.g., LAN, WAN, Internet) and how to use them to share information. Participate in at least one joint project between groups or classes at distant sites across a network (e.g., listservs, discussion groups, bulletin boards, data sharing, or joint authoring projects).

Tele 4 Select a topic of interest and use the Internet to locate public domain or shareware software, multimedia resources, on-line databases such as ERIC, commercial services such as CompuServe or America Online, and other resources of value to Pre-K–12 teachers and students. Maintain a log of the search, describing the resources and listing their Internet addresses.

Tele 5 Design a thematic unit or other curriculum development project in which telecommunications is integrated effectively into the teaching/learning activities.

Distance Teaching and Learning

This group of competencies emphasizes a basic understanding of how interactive television and other distance learning technologies are being implemented in the Pre-K–12 schools in Illinois and how teachers are involved.

Dist 1 Describe the various types of distance education technologies applied in Pre-K–12 environments as well as their strengths and weaknesses (e.g., audio-conferencing, cable television, ITFS, compressed video, satellite, fiber optics).

Dist 2	Identify effective presentation and interaction skills applied by teachers who use interactive television as the major medium for distance education.
Dist 3	Describe major distance education initiatives impacting Pre-K–12 schools in Illinois.

Interactive Multimedia

This group of competencies emphasizes what interactive multimedia is, the types of multimedia curriculum materials most commonly available to Pre-K–12 classrooms, and some basic ways to customize multimedia instructional materials.

IMM 1	Describe the various types/levels of interactive multimedia.
IMM 2	Demonstrate how to hook up a CD-ROM drive and videodisc player to a computer and a display device; access the content of the CD-ROM, videodisc, or other multimedia curriculum product; and project the images onto a large screen for group instruction.
IMM 3	Identify common criteria often used to select and evaluate interactive multimedia for educational purposes, review several applications using the criteria, and identify some exemplary titles pertinent to one's major (e.g., hypermedia stacks, videodiscs, CD-ROMs, and software).
IMM 4	Describe how hypermedia is developed (for interactive multimedia instruction) and how videodiscs can be repurposed to create a lesson for a Pre-K–12 audience. Produce a simple lesson using one or the other.
IMM 5	Design a thematic unit or other curriculum development project in which interactive multimedia is integrated effectively into the teaching/learning activities.

Instructional Video

This group of competencies targets the effective use and production of videotapes, as well as the skills needed to digitize video and other visual images to create electronic presentations that communicate an educational message.

Video 1	Demonstrate how to operate a VCR, and select and effectively integrate a videotape or video clip into existing Pre-K–12 curricula.

Video 2 Produce an instructional video by

- completing preproduction activities such as planning, scripting-writing, audio and video sequencing, and storyboarding.
- shooting the video in teams; operating a video camera, tripod, and microphone; and using effective camera movement and compositional techniques.
- editing the tape.

Video 3 Evaluate at least three commercially produced instructional (i.e., video, multimedia, and print) materials, citing effective and ineffective visual design principles that are incorporated into each.

Video 4 Create digitized video clips, photographs, and clip art components for an electronic presentation/lesson. Produce an electronic presentation using the components to effectively communicate an educational message.

Electronic Classroom

Recognizing that technology tools are not independent of learning objectives, student characteristics, or existing curriculum, this group of competencies emphasizes appropriate planning and decision-making for a technology-rich environment.

EC 1 Identify the advantages, limitations, and instructional applications of a variety of media and communications technologies.

EC 2 Prepare an instructional unit pertinent to one's major which takes into account the constraints of an established curriculum, the particular characteristics of a group of learners, and the availability of various types of technology as well as other resources.

EC 3 Identify resources (e.g., print publications, telecommunications sources, types of people, and physical settings) for staying current in communications technology applications in education.

EC 4 Indicate how equity, ethics, and legal issues such as copyright law and fair use principles are influencing the use of technology in educational settings.

Using the Computer To Enhance Teacher Productivity

Dr. Bruce R. Harris

Ameritech

Western Illinois University

Tools for Teaching with Technology

The WIU Approach
to Integrating Technology
into Teacher Education

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Using the Computer To Enhance Teacher Productivity

Dr. Bruce R. Harris, Department of Instructional Technology and Telecommunications

Module Context

Course Description

ITT 223 - Educational Microcomputing and Technology. This course enables students to gain expertise in using computers and computer-related technologies in the public schools. It emphasizes computer applications, evaluation and selection of educational software programs, and educational telecommunications.

Course Prerequisites

None

Additional Courses Where Module Could Potentially Fit

Any Elementary Education course which requires students to perform basic word processing, database, spreadsheet, and graphics applications, in addition to software evaluation.

Other Relevant Student Characteristics

Undergraduate students majoring in Education (with an emphasis in Elementary Education)

Module Focus

Title of the Module

Using the Computer To Enhance Teacher Productivity

Content Area of the Module

Instructional Technology

Description of the Module

Overall, the emphasis is on how to use a computer to increase productivity for teachers through the use of word processing, databases, spreadsheets, graphics, software evaluation, and instructional materials development, and integrate its use into the everyday functioning of the classroom/learning process.

Ameritech Student Outcome(s) Supported

- To evaluate and use communications technologies along with computers and multimedia to support the instructional process.

- To use communications technologies to enhance parental involvement and administrative effectiveness within the schools.

- To use communications technologies to enhance personal and professional productivity.

Specific Module Objectives

- To effectively operate a Macintosh computer, and be able to use an Apple IIe and a MS-DOS compatible machine.

- To create original word-processing, spreadsheet, and database documents that can be used for administrative applications, teaching and/or learning, or communications with parents and other community members. Know the major advantages and features of each.

- To identify criteria commonly used to evaluate educational software, review several types of software using the criteria, and identify exemplary titles pertinent to one's major.

Technology Competencies Developed Through the Module

Awareness

Students will develop an awareness of the broad variety of educational software available to K-12 teachers.

Hands-On Experience

Students use computers to complete a variety of exercises commonly performed with a word processor, spreadsheet, and database by K-12 teachers.

Skills Development

Students begin to develop skills in computer use and software evaluation that they will continue to improve in subsequent teacher education courses.

Module Contents

Teaching Strategies

The instructor's role is to demonstrate the desired learning outcomes for all students and to provide guided practice as the students develop the desired skills.

It is essential for the faculty member to have demonstration equipment available (such as a LCD panel or an electronic classroom) to demonstrate the skills and computer applications. Since most of the learning outcomes are procedural, the learning strategies of demonstration, coaching, and guided practice are the key strategies used. All the documents produced and given out in class are produced using the software the students will use.

Learning Strategies

Except for during the demonstration, the students are actively involved in completing the lessons in the workbook to gain the desired learning outcomes. They have required readings pertinent to the topic, as well. Students also learn process skills such as cooperative learning when they work with other students to complete some of their assignments.

Ways Students Will Demonstrate Competency

Students demonstrate competency by printing out their complete lessons and assignments and submitting these to the instructor. The instructor reviews each assignment and gives specific feedback to each student.

Ways Students Will Learn How To Use Technology in Their Classrooms

Each of the assignments are focused on how students can use these computer applications in their classrooms, thus resulting in the chances of high transfer to the everyday work environment.

Module Implementation

Print Materials Needed

A workbook was developed specifically for this module (and three other core modules). See the Supplementary Materials for a copy of this module which was included in the workbook. In addition, students need to read several chapters from the following books in order to really understand the software evaluation competencies:

Merrill, P. F., Tolman, M. N., Christensen, L., Hammons, K., Vincent, B. R., & Reynolds, P. L. (1992). *Computers in Education* (2nd ed.). Englewood Cliffs, NJ: Prentice-Hall.

In and Out of the Classroom with Microsoft Works 3.0 (Macintosh version). (1990). Redmond, WA: Microsoft Corporation.

Equipment/Technology Needed

- A computer lab with a Macintosh computer for every student and open lab hours for students to practice the module lessons
- Laser printers
- Access to Apple II series computers
- Access to MS-DOS compatible computers
- Demonstration equipment (e.g., LCD panel, electronic classroom)

Software or Other Electronic Media Needed

- Microsoft Works 3.0 for Macintosh
- K-12 educational software programs for Macintosh, Apple II, and MS-DOS computers
- Several graphics programs for the Macintosh such as Print Shop, Certificate Maker, CalendarMaker, SuperPaint, and PageMaker
- Disk which comes with *In and Out of the Classroom with Microsoft Works 3.0* manual

Implementation Recommendations

It is critical for the instructor to be prepared for the module by completing all the assignments listed in the module workbook, so that he or she can answer student questions during the guided practice sessions. In addition, reserving demonstration and computer lab equipment is critical to the successful implementation of this module.

Supplementary Materials

Computer Tool Applications: Word Processing, Database, Spreadsheet, & Graphics

A tool is defined as an instrument for doing work or accomplishing a task. Once a worker becomes proficient with it, the tool then becomes an extension to be used intuitively, without the need of premeditation. To observe instances of a computer being used as a tool, it is only necessary to visit a bank, a typical office, or almost any other place where information is being processed or created—including the schools.

In the tool mode the computer is not looked upon as an aid to, or surrogate for, the teacher, as it is in the tutor mode; nor is it an object to be studied, as in the tutee mode. Rather, it serves a utilitarian function in getting a job done. The particular program that is working within the computer determines the nature of the tasks that can be accomplished. When the computer becomes a tool, it assumes a variety of identities. It may become a paintbrush, enabling an artist to create colorful graphics; it may change into a magical typewriter that permits the aspiring author to manipulate words and paragraphs with the press of a key; or it may be transformed into an electronic spreadsheet capable of reflecting constantly changing data.

The widespread acceptance of tool applications such as word processing, spreadsheets, graphics, and database management has caused schools to rethink the meaning of computer literacy. Where once this term implied programming, it is rapidly coming to mean the competent use of a variety of computerized tools. (Bullough & Beatty, 1991, p. 77)

Objectives

At the completion of this unit, you will be able to . . .

- Identify the various ways a computer may be used as a tool.
- Describe the major advantages and features of a word processor, database, and spreadsheet.
- Develop an original word processing, database, and spreadsheet document.
- Use a word processor, database, and spreadsheet together to create personalized form letters.
- Develop an original graphics document.

Resources To Be Used

Software

- Microsoft Works 3.0 for the Macintosh
- Choice of one of the following graphics-based programs: Print Shop, Certificate Maker, CalendarMaker, SuperPaint, or PageMaker
- Data files from *In and Out of the Classroom with Microsoft Works 3.0*

Background

Word Processing

> Word processing refers to the use of computer software and hardware in the writing, editing, formatting, storing, and printing of written documents. A computer program designed for word processing is called a word processor. This term may also be used to refer to the combination of both the software and hardware. Anyone who has cringed when making an error on a typewriter will greatly appreciate this wonderful tool. Text typed on the computer keyboard is displayed on the computer screen and stored in the computer memory. (Merrill, Tolman, Christensen, Hammons, Vincent, & Reynolds, 1992, p. 134)

Using a word processor is so much easier and more efficient than writing with pens, pencils, and typewriters that even a poorly designed word processor will impress a new user. Word processing is an efficient use of a personal computer. A word processing program allows you to type at your computer, alter or change your work electronically on the screen/monitor, then print a copy of the electronic document onto paper when you are ready.

> Word processing is such a valuable tool that many people feel this single application is sufficient justification for the purchase of a microcomputer. Word processing has obvious values for writers, secretaries, and teachers. Teachers can use a word processor to prepare syllabi, lesson plans, handouts, worksheets, examinations, and written reports. It is also highly recommended that students be given access to this tool to facilitate their writing. (Merrill et al., 1992, p. 41)

The following are some of the major advantages of a word processor over a typewriter:

- Typing on a word processor is easier and faster than typing on a regular typewriter. A feature known as "wordwrap" allows you to type on the computer without continually using the return key when you come to the right margin on each line you type. The wordwrap feature allows you to continue typing when you come to the end of a line. The word processor automatically breaks your line at the last word that fits within your margins, then advances to the next line. This feature saves key strokes and time.

- Correcting mistakes and revising a document is much easier on a word processor. You can change a word, delete/erase a word or series of words, move a sentence or paragraph, insert words, and so on. Features such as move, copy, search, replace, find, delete, and merge permit the user to easily organize and alter information within a document. The word processor will correctly adjust the spacing of your document whenever changes are made. These features can help make writing more precise and creative.

- With a word processor, you can easily save your written work to revise, update, or modify at a later time. Your electronically created documents will all be stored/saved on a small computer diskette. A very large amount of text can be saved on one computer diskette, helping to alleviate file cabinet space for paper storage.

Use of Word Processing in Teaching

> Teaching students to write well is one of the important challenges teachers face. Students need to learn the basic rules of good communication. They should be encouraged to spell and punctuate correctly, and creativity should be stressed. Sometimes these efforts are thwarted when the mechanics of writing and rewriting bring discouragement.
>
> More attention is being given to the value of using word processors with students. Their use encourages students who might otherwise avoid writing. The tasks of planning and composing a first draft, editing, rewriting, and proofreading are reduced with the use of a word processor. The writer can easily add, delete, and change the order of items as needed. Changes can be made and a fresh, corrected copy printed without retyping.

> The ability of many word processors to undo any change at the press of a button encourages students to try editing changes. Being able to make the change, examine the work, and quickly change it back if the writer prefers the earlier style provides a psychological freedom that encourages creativity and exploration of ideas.
>
> Teachers must not express the view to their students, explicitly or implicitly, that editing and reediting are a waste of time. Valuable learning comes in the editing and polishing process. This is when tedium usually mounts up and when the word processor shows its strengths. When an entire document is retyped on a typewriter, every word needs to be proofread because new errors may have been made in the retyping. When editing is done on a word processor, proofreading can be limited to the parts of the document that were changed. The user soon gains confidence that all else will remain as it was before. (Merrill et al., 1992, pp. 144-145)

Database Management

You may think that databases are used only by experienced computer users. But even if you have never used a computer, you are already a regular user of databases! A file of 3 x 5 index cards containing recipes is a database. A phone book is a database. A filing cabinet full of student records is a database. A picture file is a database. So, too, is an encyclopedia, a card catalog, or an address book.

A database is any collection of related information stored in an organized, systematic manner. Databases can be created to organize any type of information, from recipes to phone numbers, from baseball statistics to results of scientific experiments. There are so many different varieties of databases in the world that the only thing many have in common is their purpose, which is the meaningful and useful organization of information.

The database concept is vital to our modern, information-based society. Schools, governments, corporations, small businesses, and other institutions all accumulate and need to access quantities of information that can only be handled by high-speed, computerized systems. Imagine what it would be like if telephone information operators still had to search through printed directories to find the number you need!

There are several reasons why the computer database has become an important tool for storing and retrieving information in today's world:

1. A computer database allows storage of massive quantities of information in a very small area. The amount of information usually contained in a file drawer often can be contained on a single floppy disk.

2. The computer is capable of locating and retrieving information in a fraction of the time needed to go through a card file.

3. A computer database allows for easier analysis and cross-referencing of information. It enables a person to look quickly at a collection of information from a number of different angles.

How Does a Database Work?

Think of a database as a collection of records, each in a manila folder that contains information about a certain topic. For example, each record might contain information about one specific student in a class. This information is organized into categories or fields. The information in a specific field is called an entry.

Although each record in the folder contains the information for a different student, you would expect to find the same fields of information on each record. Because all of the records contain the same kind of information, they can be thought of as one file.

A file is simply a collection of related information. In this case, you could combine all of the individual records into one file and call it Student Data. This file might be stored in a filing cabinet with many other files: Teacher Records, PTA Members, School Budget, and so on.

When a database is organized in a computer, the same principles of organization apply. It is only harder to conceptualize because it is intangible; you cannot pick up a computer file with your hands and manually move the records inside of the file around. When thinking of a computer database, it helps if you remember the analogy of the filing cabinet database. In this exercise, you will get a chance to use a computerized database much like the filing cabinet database that has just been described.

Spreadsheets

The spreadsheet is a powerful tool for working with any information that involves a lot of numbers: school records, bookkeeping, budgets, financial forecasts, and so on. Computer-produced spreadsheets can greatly increase the power and efficiency of traditional pencil and paper spreadsheets. One of the most useful applications of computer spreadsheets for teachers is keeping track of grades.

> Calculating is an obvious tool application of the computer. Students are required to carry out many calculations in mathematics, science, statistics, and other classes. By using a computer, students can make such calculations with much greater speed and accuracy. In the past, many problems students were asked to solve were necessarily contrived and simplified to reduce the difficulties of the required calculations. If students have access to the tools of computer calculation, they should be able to solve much more realistic and challenging problems. By using a computer to perform routine and arduous calculations, students will be able to concentrate on the application and theory of what they are learning rather than on the calculation procedures. Very sophisticated calculating tools, such as statistical packages and electronic spreadsheet programs, are now readily available on microcomputers.
>
> Electronic spreadsheets are electronic versions of the familiar manual spreadsheets, sometimes referred to as worksheets, or accountant's pads. A manual spreadsheet is simply a piece of paper marked off in numbered rows and columns that intersect, forming a grid. The intersection of a specific row and a specific column is called a cell. A given cell can be specified by its row and column numbers. Thus, cell R3C6 would be the cell intersected by row three and column six.
>
> A powerful advantage of an electronic spreadsheet is its ability to quickly recalculate all the values in the spreadsheet whenever any formulas or relevant values are changed. This allows the user to ask "what if?" questions and determine the effects of changing various assumptions or policies. For example, a teacher could easily determine the effects of different weighting schemes on final grades by simply changing the weighting factors in the total score formula. (Merrill et al., 1992, pp. 177-178)

Other Tool Applications

Graphics

Computer graphics, in its broadest sense, encompasses manipulating visual images electronically. There are now a wide variety of computer graphics applications available, ranging from a child drawing a simple picture on the computer screen to an architect using the computer to design a multimillion dollar building. We have included a short assignment on computer graphics in this course to give you a brief introduction to the vast array of things that can be done with computer graphics. These can be useful and rewarding in the classroom, as well as in personal applications.

As you become acquainted with computer graphics, the first thing you will probably notice is the high quality of the finished product that can be obtained. Even young children with little artistic ability can produce very professional-looking pictures and charts when using a computer with the right graphics software. This does not mean that computer graphics is easy or that it is only for children. Very serious graphics work can be accomplished, including sophisticated art. The point is that there are many different levels of computer graphics ranging from a level where the computer does most of the work with only slight input from the user to a level where the computer is simply a blank medium upon which the artist has total freedom to create. One of the great advantages to using the computer for graphics work, however, is that you don't have to be an artist to turn out high-quality work. Yet, if you are an artist, you can work with a tool that will allow you to do work that you could not do with any other tool.

In addition to the wide variety of applications and the improved quality of work that children in classrooms can produce, many teachers are finding that computer graphics activities are intrinsically motivating. This should not be surprising since teachers have always known that art activities such as coloring, painting, and drawing are universally loved by school children. How many times do you remember a classmate saying "Oh yuck! I hate doing art!"?

Desktop Publishing

Desktop publishing means producing print materials with a personal computer that closely resemble those produced by a professional printer or print shop. The essential element is precise control over placement of all materials on each page:

> As mentioned previously, word processing programs are mainly used in the production of lesson plans, worksheets, exams, reports, memos, articles, essays, poems, and letters. However, early word processors were not able to produce professional quality documents such as flyers, brochures, programs, newspapers, magazines, manuals, or books. To produce such documents, authors had to prepare the text for the document on a typewriter or word processor, have an artist prepare illustrations or obtain glossy prints of photographs, and then submit the manuscript and photos to a publishing company. The publisher would have the text typeset and then have a paste-up artist lay out the text and graphics for each page. These camera-ready pages would then be sent to a printer for printing. This process was very time consuming and expensive. Modifications were difficult and very expensive. (Merrill et al., 1992, pp. 153-154)

The purpose of desktop publishing software, then, is to produce more sophisticated documents which combine text and graphics than is typical of word processors or print graphics software. Merrill et al. (1992) briefly describe the history behind desktop publishing:

> Between 1983 and 1985, four significant new technologies were introduced that made it possible for a single individual to produce a document of professional quality at a desk by using low-cost microcomputers and printers. In 1983, Canon introduced laser printer technology that could print text and graphics at a resolution of 300 dots per inch. Apple launched the Macintosh computer in 1984 with its graphical user interface that allowed high-resolution text and graphics to be easily combined on the same screen. Adobe Systems introduced the text and graphics description computer language PostScript, which made it possible for text fonts and graphics objects to be described using mathematical routines. The next year Apple followed with the LaserWriter printer, which incorporated the Canon laser printer technology and the Postscript language. Also in 1985, Aldus Corporation introduced the powerful page-layout software program PageMaker. With these basic components in place—namely, (1) the Macintosh computer, (2) the LaserWriter printer, (3) Postscript, and (4) PageMaker—high-quality publishing came into the hands of the individual for the first time. The term desktop publishing (DTP) was coined in 1985 by the president of Aldus Corporation, Paul Brainerd, to refer to this new computer application. Many people purchased Macintosh computers to do desktop publishing. After 1985 this capability also became available on other computers. (p. 154)

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Summary

Merrill et al. (1992) summarize the use of computers as tools in the following:

> The computer is certainly one of humankind's most versatile tools. By simply changing the set of instructions or the computer program stored in the memory of the computer, we dramatically change its functions. With one program, it becomes an electronic typewriter or word processor; with another it is turned into a powerful calculator. By inserting a diskette with still other programs, we can turn the computer into an electronic filing cabinet, a drafting table, an artist's easel, a postal carrier with the speed of light, or a music synthesizer. It is true that these computer tools are often only new manifestations of other, more common tools. However, the computer versions significantly expand their application, speed, accuracy, and power. The computer is a tool that can extend our mental capabilities. Computer tools have potential application in virtually every aspect of the school curriculum. (p. 185)

References

Bullough, R. V., & Beatty, L. F. 1991. *Classroom Applications of Microcomputers*. Merrill: New York.

Merrill, P. F., Tolman, M. N., Christensen, L., Hammons, K., Vincent, B. R., & Reynolds, P. L. (1992). *Computers in Education* (2nd ed.). Englewood Cliffs, NJ: Prentice-Hall.

Assignments

Before beginning these assignments, you should have initialized your 3 ½" disk and copied all the documents which will be used in this unit according to the instructions explained by the instructor.

Since the computer lab equipment (including computers and networks) are frequently upgraded and changed, it is possible that some of the instructions in the assignment packets may differ somewhat from what you see on your computer.

Word Processing Assignments

Assignment #1: Print a Field Trip Notice

Step 1 Ask a lab assistant for the Word Processing Assignment #1: Printing a Field Trip Notice packet. This is the first lesson from the manual entitled *In and Out of the Classroom with Microsoft Works 3.0.*

Step 2 Follow the step-by-step instructions specified in the packet.

Step 3 After you have completed the assignment, return the packet to the lab assistant or instructor.

To receive full credit for this assignment, your assignment should meet all the criteria specified (see the Grading Criteria section in this chapter). An example of a completed assignment which meets all the specified criteria is included at the end of the assignment packet. Specify your name, section number, the date, and the assignment number (for this assignment, it is WP#1) in the header of your document.

Assignment #2: Creating a Test

Step 1 Ask a lab assistant for the Word Processing Assignment #2: Creating a Test packet.

Step 2 Follow the step-by-step instructions specified in the packet.

Step 3 After you have completed the assignment, return the packet to the lab assistant.

To receive full credit for this assignment, your assignment should meet all the criteria specified in the packet (see the Grading Criteria section in this chapter). An example of a completed assignment which meets all the specified criteria is included at the end of the assignment packet. Specify your name, section number, the date, and the assignment number (WP#2) in the header of your document. Both pages for this assignment should be stapled together when you submit it.

Assignment #3: Writing a Résumé

For this final word processing assignment, you will type and print a personal résumé. This assignment provides the opportunity to review what you have already learned in the previous two word processing assignments and to challenge your retention of the material by putting your knowledge into action. Step-by-step instructions will not be provided. For this assignment, you will write your own personal résumé from a New, Untitled word processing document.

In this day and age, writing an effective résumé is a critical component in the process of securing a job. Résumé is a French word which means summary. Usually a written, one-page summary of an individual's personal qualifications for a specific job, the résumé is used as an introduction to an employer. A person seldom will be employed on the basis of a résumé alone, but if treated effectively, it can often open the door to several personal interviews. The focus of this assignment is on using the word processor for formatting your résumé document, not the content of your résumé.

You may use any format style in creating your résumé. Several appendices have been included in these instructions for Assignment #3 to provide examples and ideas for formatting your résumé. Appendix A provides a one-page, general format for writing a résumé. Appendix B contains four different résumé formats, all based on the same information from one person. Appendix C contains four résumés from WIU education majors seeking a teaching position after graduation. Appendix D contains two résumés which were actually developed using Microsoft Works.

Specific Criteria for WP Assignment #3

Your résumé should meet at least the following criteria in order to receive full credit (see the Grading Criteria section in this chapter):

- One **bold-faced** word.
- One underlined word.
- One word or sentence that has been centered on the page.
- One word that has been typed in a *different font.*
- One word that has been typed in a different font size.
- One graphic shape (a box, line, circle, etc.).

Be sure to type your name, section number, the date, and the assignment number (WP#3) in the header of your document. If you want to print a copy of your résumé without the header information for your own files, just delete the header and reprint your résumé. The résume you submit must be created using Microsoft Works; résumés typed on a typewriter will not be accepted.

1. Get started with Works

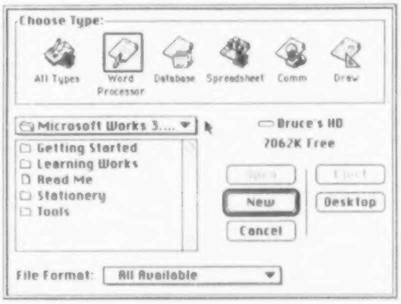
    - Use the procedure specified in the EC 209 class demonstration for locating the Works folder on the network. Double-click the Microsoft Works folder. Double-click the Microsoft Works program icon.

    Works displays the Open File dialog box. Here you can create a new document or open an existing file.

2. Create a New Word Processing Document

   To create your résumé, you first need to create a new document.

   - Insert your data disk in the disk drive.
   - Click the Word Processor icon.



   - Click the New button.

     Works creates a new word processing document with the cursor blinking in the top, left corner of the document. Begin writing your résumé. Be sure to save your document regularly (choose Save from the File menu).

Database Assignments

Assignment #1: Maintaining Student Records

Step 1 Ask a lab assistant for the Database Assignment #1: Maintaining Student Records packet.

Step 2 Follow the step-by-step instructions specified in the packet.

Step 3 After you have completed the assignment, return the packet to the lab assistant.

To receive full credit for this assignment, your assignment should meet all the criteria specified in the packet (see the Grading Criteria section in this chapter). An example of a completed assignment which meets all the specified criteria is included at the end of the assignment packet. Specify your name, section number, the date, and the assignment number (DB#1).

Assignment #2: Creating a Database

For this assignment, you will create and print a database. You may develop the database for any purpose of your choice. (If you are having a difficult time determining what kind of database to develop, refer to the ideas suggested in the Assignment #1: Maintaining Student Records packet.) This assignment provides the opportunity to review what you have already learned in the previous database assignment and to challenge your retention of the material by putting your knowledge into action. Step-by-step instructions will not be provided. These instructions will provide general guidelines and policies to assist you in creating your own database from a New, Untitled database document.

Specific Criteria for DB Assignment #2

Your database document should meet at least the following criteria in order to receive full credit (see the Grading Criteria in this section):

- Fifteen records
- Ten fields

- The entire database printed using the report view—at least one field needs to be sorted, so when the records are printed, they are printed with some type of hierarchical organization
- A filter created to find a subset of records within the entire database, with only those records which meet your specifications printed out

Specify your name, section number, the date, and the assignment number (DB#2) in the header of your document. The document you submit for this assignment should be an original database document created as a "New" file.

1. Get started with Works
    - Use the procedure specified in the EC 209 class demonstration for locating the Works folder on the network. Double-click the Microsoft Works folder. Double-click the Microsoft Works program icon.
    - Works displays the Open File dialog box. Here you can create a new document or open an existing file.
2. Create a New Database Document

    To create your database, you first need to create a new document.

    - Insert your data disk in the disk drive.
    - Click the Database icon.
    - Click the New button.

    Works creates a new database document ready for you to title the first field. Be sure to save your document regularly (choose Save from the File menu).

Spreadsheet Assignments

Assignment #1: Recording Student Grades

Step 1 Ask a lab assistant for the Spreadsheet Assignment #1: Recording Student Grades packet.

Step 2 Follow the step-by-step instructions specified in the packet.

Step 3 After you have completed the assignment, return the packet to the lab assistant.

To receive full credit for this assignment, your assignment should meet all the criteria specified in the packet (see the Grading Criteria section in this chapter). An example of a completed assignment which meets all the specified criteria is included at the end of the assignment packet. Specify your name, section number, the date, and the assignment number (SS#1).

Assignment #2: Creating a Spreadsheet

For this assignment, you will create and print a spreadsheet. You may develop the spreadsheet for any purpose of your choice. (If you are having a difficult time determining what kind of spreadsheet to develop, refer to the ideas suggested in the Assignment #1 Recording Student Grades packet.) This assignment provides the opportunity to review what you have already learned in the previous spreadsheet assignment and to challenge your retention of the material by putting your knowledge into action. Step-by-step instructions will not be provided. These instructions will provide general guidelines and policies to assist you in creating your own spreadsheet from a New, Untitled spreadsheet document.

Specific Criteria for SS Assignment #2

Your spreadsheet document should meet at least the following criteria in order to receive full credit (see the Grading Criteria in this section):

- Ten rows
- Five columns
- Five cells which contain formulas
- At least three different formulas used
- All columns should be labeled and contain a title
- Two different versions of your spreadsheet—First, print a copy of your spreadsheet which displays the values that result from calculations in the spreadsheet cells. Second, print a copy of your spreadsheet which shows all the formulas for each cell (choose Show Formulas from the Options menu).

Specify your name, section number, the date, and the assignment number (SS#2). The document you submit for this assignment should be an original document created as a "New" file.

1. Get started with Works

    - Use the procedure specified in the EC 209 class demonstration for locating the Works folder on the network. Double-click the Microsoft Works folder. Double-click the Microsoft Works program icon.

      Works displays the Open File dialog box. Here you can create a new document or open an existing file.

2. Create a New Spreadsheet Document

    To create your spreadsheet, you first need to create a new document.

    - Insert your data disk in the disk drive.
    - Click the Spreadsheet icon.
    - Click the New button.

    Works creates a new spreadsheet document ready for you to enter your data. Be sure to save your document regularly (choose Save from the File menu).

Integrated Assignment

Step 1 Ask a lab assistant for the Integrated Assignment: Reporting Student Progress packet.

Step 2 Follow the step-by-step instructions specified in the packet.

Step 3 After you have completed the assignment, return the packet to the lab assistant.

To receive full credit for this assignment, your assignment should meet all the criteria specified in the packet (see the Grading Criteria section in this chapter). An example of a completed assignment which meets all the specified criteria is included at the end of the assignment packet. Specify your name, section number, the date, and the assignment title (Integrated). Both pages for this assignment should be stapled together when you submit it.

Graphics Assignment

For this assignment you will generate an original graphics-based document. You may develop the document for any purpose of your choice: a birthday card, a banner, a certificate, a flyer, or anything else that comes to your mind. The purpose is to get you into the software and help you see the capabilities of a graphics program. We recommend that you use one of the following programs to complete this assignment available in the Horrabin Hall Computer Lab: Print Shop, Certificate Maker, or CalendarMaker. You may also use one of the following programs, but be aware that they are more difficult to learn than the previous three programs: SuperPaint, PageMaker, MacDraw, and MacPaint. Your document must be an original document—it is not appropriate to just print a copy of one of the clip art files on the file server. The only specific criteria for this assignment is that you use a graphics-based computer program to create the document. For this assignment, you may specify your name, section number, the date, and the assignment title (Graphics Assignment) in pen.

Grading Criteria

The grading criteria for these assignments are based on the degree to which your assignment meets the criteria specified in this chapter. If your assignment meets all of the criteria specified, then you will receive full credit, or a grade of 100%. The following scale will be applied for assignments which do not receive full credit. Each assignment should be submitted as an individual assignment; please do not staple several individual assignments together when you submit them.

Criteria for Assignments

100%	Meets all of the specified criteria
90%	Meets almost all of the specified criteria, one item missing or incorrect
80%	Meets almost all of the specified criteria, two items missing or incorrect
70%	Meets most of the specified criteria
60%	Meets a little more than half of the specified criteria
50%	Meets about half of the specified criteria
40%	Meets less than half of the criteria
30%	Meets few, if any, of the specified criteria, but more than doing nothing

Review

Key Concepts

1. Database
2. Desktop presentation
3. Desktop publishing
4. Field
5. Record
6. Spreadsheet
7. Tool Application
8. Word Processor
9. Word Wrap

Review Questions

1. Describe the advantages of using a word processor over using a typewriter.

2. Explain how a word processor can be used to help students overcome the discouragement they sometimes feel in learning to write well.

3. What is a database?

4. List several common databases which people use everyday.

5. Explain several reasons why the computer database has become an important tool in today's world.

6. What is a spreadsheet?

7. Describe at least one powerful advantage of an electronic spreadsheet.

8. List at least two other tool applications used in education besides a word processor, database, and spreadsheet.

9. Define the term "desktop publishing."

Résumé Suggestions

Résumé suggestions from the
Occupational Information and Placement Office
Western Illinois University
116 Sherman Hall
Macomb, IL 61455
(309) 298-1838

OBJECTIVE: Concise, attractive summary of qualifications and experiences

EDUCATION:
Bachelor of ________________, May 1992
Western Illinois University, Macomb, IL 61455
Major: ________________________
GPA: ________ (if 2.75 or above)

RELATED EXPERIENCE:
Intern, Any company, Any town, December 1991-April 1992
- Utilize action verb to describe
- Researched . . .
- Developed . . .

Student Teacher, Any school, January 1992-May 1992
- Planned lessons
- Initiated . . .

WORK HISTORY:
Position title, Any company, Date
- Highlight accomplishments with one-liner descriptions
- ________________
- ________________

ACTIVITIES:
President, Any organization, Date
- ________________
- ________________

HONORS:
Scholarships
Awards
Dean's List
Who's Who

REFERENCES: Available upon request

Note: Personal information will probably not add to your application in a positive way, but may affect interviewer bias in a negative way.

John M. Smith
123 Main Street
Ipava, IL 6154
(309) 765-4321

EDUCATION:

Bachelor of Arts, May 1994
Western Illinois University, Macomb, IL 61455
Major: History Minor: English GPA: 3.3/4.0

EXPERIENCE:

September 1993 to Present

Assistant Manager, The XYZ Company, Anywhere, IL
- Coordinate merchandise selection and design displays
- Maintain purchase orders and inventory control
- Responsible for accounts payable/receivable
- Prepare ledger bills
- Arrange employee work schedules

Summers 1991, 1992, and 1993

Construction Laborer, Handbuilt Homes, Elsewhere, IL
- Installed siding and drywall
- Constructed roofing
- Set-up framework
- Aided in setting concrete forms
- Conducted initial land surveys

ACTIVITIES AND HONORS:

Delta Delta Delta Fraternity
- President
- Parents Weekend Chairman

Society of Human Resource Management
Dean's List (1991 and 1992)

REFERENCES:

Available upon request

Please be very specific when giving descriptions of your job responsibilities. Always use "action" verbs such as coordinate, provide, assign, conduct research, edit, maintain, analyze, design, arrange, generate, and so on. List everything in chronological order and speak in the present tense if you are still employed at a job, and the past tense if you are no longer there. The résumé should be concise yet thorough while being easy to read. There are no bad résumés, only ineffective ones.

John M. Smith
123 Main Street
Ipava, IL 61544
(309) 765-4321

EDUCATION

Bachelor of Arts, May 1994
Western Illinois University, Macomb, IL 61455
Major: History Minor: English GPA: 3.3/4.0

EXPERIENCE

Assistant Manager (September 1993 to Present)
The XYZ Company, Anywhere, IL

- Coordinate merchandise selection and design displays
- Maintain purchase orders and inventory control
- Responsible for accounts payable/receivable
- Prepare ledger bills
- Arrange employee work schedules

Construction Laborer (Summers 1991, 1992, and 1993)
Handbuilt Homes, Elsewhere, IL

- Installed siding and drywall
- Constructed roofing
- Set-up framework
- Aided in setting concrete forms
- Conducted initial land surveys

ACTIVITIES AND HONORS

Delta Delta Delta Fraternity

- President
- Parents Weekend Chairman

Society of Human Resource Management
Dean's List (1991 and 1992)

REFERENCES

Available upon request

John M. Smith
123 Main Street
Ipava, IL 61544
(309) 765-4321

EDUCATION

Bachelor of Arts, May 1994
Western Illinois University, Macomb, IL 61455
Major: **History** Minor: **English** GPA: **3.3/4.0**

EXPERIENCE

Assistant Manager The XYZ Company, Anywhere, IL
September 1993 to Present

Coordinate merchandise selection, maintain purchase orders and inventory control, responsible for accounts payable/receivable, prepare ledger bills, arrange employee work schedules, and create in-store displays.

Construction Laborer Handbuilt Homes, Elsewhere, IL
Summers 1991, 1992, and 1993

Installed siding and drywall, constructed roofing, set-up framework, aided in setting concrete forms, and conducted initial land surveys.

ACTIVITIES AND HONORS

Delta Delta Delta Fraternity
- President
- Parents Weekend Chairman

Society of Human Resource Management

Dean's List 1991 and 1992

REFERENCES

Available upon request

JOHN M. SMITH

Current Address
111 Olson Hall
Macomb, Illinois 61455
(309) 123-4567

Permanent Address
123 Main Street
Ipava, Illinois 61544
(309) 765-4321

EDUCATION

Bachelor of Arts, May 1994
Western Illinois University, Macomb, IL 61455
Major: **History**
Minor: **English**
GPA: 3.3/4.0

EXPERIENCE

Assistant Manager (September 1993 to Present)
The XYZ Company, Anywhere, IL

- Coordinate Merchandise Selection and Design Displays
- Maintain Purchase Orders and Inventory Control
- Responsible for Accounts Payable/Receivable
- Prepare Ledger Bills
- Arrange Employee Work Schedules

Construction Laborer (Summers 1991, 1992, and 1993)
Handbuilt Homes, Elsewhere, IL

- Installed Siding and Drywall
- Constructed Roofing
- Set-Up Framework
- Aided in Setting Concrete Forms
- Conducted Initial Land Surveys

ACTIVITIES AND HONORS

Delta Delta Delta Fraternity

- President
- Parents Weekend Chairman

Society of Human Resource Management
Dean's List 1991 and 1992

REFERENCES

Available upon request

(Name and other info goes here)

EDUCATION

Bachelor of Science, December, 1993
Western Illinois University, Macomb, IL
Major: Mathematics
Minor: French
GPA: 3.83/4.00

WORK EXPERIENCE

Student Teacher, J. B. Young Junior High School, Davenport, IA
August - October, 1993

- taught regular ability eighth grade math students
- taught high ability seventh grade math students
- designed and constructed five bulletin boards
- assisted a large number of multicultural students

Student Teacher, West High School, Davenport, IA
October - December, 1993

- taught Introductory Algebra to students in grades 10 & 11
- taught Geometry to students in grades 10-12
- taught Advanced Algebra to students in grades 10-12
- worked with many ESL students in Introductory Algebra

Private Tutor
Fall, 1993

- tutored seven students on a weekly basis in Introductory Algebra 2, Algebra 2, Geometry, Pre-Calculus, Trigonometry, and AP Calculus

Business Manager, Girl Scouts, Land of Lincoln Council, Springfield, IL
Summer, 1993

- purchased camp activity supplies
- recorded account expenditures
- interacted with campers on a daily basis
- managed camp souvenir shop
- maintained and used camp vehicles as needed

HONORS AND SCHOLARSHIPS

- Kappa Mu Epsilon Mathematics Honor Society
- Elizabeth Glenadine Gibb Mathematics Scholarship
- Alpha Mu Gamma Foreign Language Honor Society
- Joseph & Mary Stipanowich Mathematics Scholarship
- Student Alumni Council Potential Young Leadership Award
- Phi Kappa Phi National Honor Society
- H. Glenn Ayre Mathematics Award
- Phi Eta Sigma Freshman Honor Society
- Music Talent Grant–viola performance

ACTIVITIES

- Residence Hall Government
- WIU Chamber and Symphony Orchestras
- President, Mathematical Association of America, WIU Chapter
- Student Orientation Board Leader
- Residence Hall Judicial Board
- Knox-Galesburg Symphony Orchestras
- Volunteer Math Tutor, WIU Mathematics Department, Spring, 1993

REFERENCES Available upon request

(Name and other info goes here)

EDUCATION

May 1988	Bachelor of Science in Education, Western Illinois University, Macomb, IL Teacher Certification: Elementary (K-9) Areas of Concentration: Language Arts and Social Science Overall GPA: 3.79 out of 4.0

PRESERVICE TEACHING EXPERIENCE

January 11, 1988 to April 8, 1988	Student Teacher Schafer Elementary School, Villa Park, IL Grade: Fourth Supervisor: Mrs. Sharon Rodriguez Responsibilities: All Subjects
October 5, 1987 to November 20, 1987	Corrective Reading Tutor Grant Elementary School, Macomb, IL Grade: Second Supervisor: Dr. Leighty Responsibilities: One-on-one testing, planning, and instruction for remedial reading
March 16, 1987 to April 29, 1987	Reading/Language Arts Block Teacher V.I.T. Consolidated Elementary School, Table Grove, IL Grade: Fourth Supervisor: Mrs. Judy Tonelli Responsibilities: Instruction of language, spelling, content area reading, and reading groups

PROFESSIONAL ORGANIZATIONS

Kappa Delta Pi (Honor Society in Education)
International Reading Association (IRA)
Phi Kappa Phi (National Honor Society)
Alpha Upsilon Alpha (Honor Society of the IRA)

AWARDS AND DISTINCTIONS

University Dean's List—1984, '85, '86, '87
National Dean's List—1985, '86, '87
Kappa Delta Pi President—1987
Who's Who in America's Colleges and Universities—1987-1988
Who's Who Among Young American Professionals—1987-1988
K. T. Thompson Scholarship Recipient—1987-1988
NEA National Student Teaching Competition Contestant—1988

WORK EXPERIENCE

May 1986	Community Bank of Plan, Plano, IL
to	Position: Teller and Bookkeeper
Present	Supervisor: Mr. Ronald Hill
August 1986	College of Education Advising Center, WIU, Macomb, IL
to	Position: Certification Department
December 1987	Supervisor: Mrs. Janice Kamm
March 1984	McDonald's, Sandwich, IL
to	Position: Cashier
May 1986	Supervisor: Ms. Rhonda Edwards
REFERENCES	Credentials and Letters of Recommendation
	available upon request from
	OCCUPATIONAL INFORMATION AND PLACEMENT OFFICE
	Western Illinois University
	Macomb, IL 61455

(Name and other info goes here)

JOB OBJECTIVE To obtain a teaching position in Grades K-9

EDUCATION
B.S. in Elementary Education, Western Illinois University, Macomb, IL
December 1985, GPA 3.2/4.0
Area of Concentration: Reading, Language Arts

TEACHING AND RELATED EXPERIENCES

1985	Student Teaching—planned and taught all subjects for first grade class, including several Science units. Westgate School, Arlington Heights, IL
1985	Individual Instruction Program for fifth grade student. Diagnosis and recommendations of reading instruction at Lincoln Grade School, Macomb, IL; part of education training experience
1985	Intensive weeklong Science unit for fifth grade, St. Paul's Elementary School, Macomb, IL; part of education training experience
1984-85	Volunteer Teaching, hosting and attending numerous Science-related programs and seminars at Western Illinois University
1984-85	Member of the Association for Childhood Education
1984	Specialized Instruction Practicum—half-day teaching second grade at McArthur Grade School, Macomb, IL

EMPLOYMENT HISTORY

Sales, Amlings Flowerland, Algonquin Road, Arlington Heights, IL
September 1985-present

Retail, K-Mart, Palatine Road, Arlington Heights, IL
1979-1985, Responsibilities: bookkeeping, Pharmacy Apprentice, area supervisor

Camp counselor, Kelly's Day Camp, Half Day Road, Half Day, IL
Summer 1984 and 1985, Responsibilities: planned and directed activities and special events for kindergarten boys, bus driver

CAMPUS ACTIVITIES AND HONORS

Board of Governors
Hall Committees: Activities, Foods, Welcome Week
Director of Move-In Committee
Outstanding Service and Dedication Award–Wetzel Hall (WIU)
Residence Assistant Selection Committee
Theater Costume and Running Crews
Dean's List–Western Illinois University Education Department
National Dean's List

CREDENTIALS Available upon request from the Occupational Information and Placement Office, Western Illinois University, Macomb, IL 61455

DATE AVAILABLE December 2, 1985

PERSONAL AND PROFESSIONAL REFERENCES

The following persons have written letters of recommendation which are on file and available upon request from the Occupational Information and Placement Office, Western Illinois University, Macomb, IL (309) 298-1838

Maryann Holyoke, Supervising Teacher for Student Teaching, Westgate School, Arlington Heights, IL (312) 398-4292

Dr. Maurice Kellogg, Professor, Elementary Education and Reading, Western Illinois University, Macomb, IL (309) 298-1777

Dr. Michael Jacobson, Assistant Professor, Elementary Education and Reading, Western Illinois University, Macomb, IL (309) 298-1784

ADDITIONAL REFERENCES

Frank Santelli, Principal, Westgate School, Arlington Heights, IL (312) 398-4292

Jean Jamieson, Kindergarten Teacher, Westgate School, Arlington Heights, IL (312) 398-4292

Steve Cannon, Manager, Amlings Flowerland, Arlington Heights, IL (312) 255-6310

Donald Pochron, Pharmacist, K-Mart Pharmacy, Arlington Heights, IL (312) 577-0115

Résumé

(Name)

PERMANENT ADDRESS
(other info goes here)

PERSONAL DATA
Birthdate: February 22, 1964
Marital Status: Married, 2 children
Health: Excellent

CAREER OBJECTIVE

Teaching kindergarten through fifth grade

EDUCATION

School	Location	Major	Degree	Date
Western Illinois University	Macomb, IL	Elementary Education	B.S.-Education	5/86
Southeastern Comm. College	Keokuk, IA	Elementary Education	Transferred	5/83
Hamilton High School	Hamilton, IL	College Prep	Diploma	5/82

HONORS (college)

GPA: Overall 3.67 on 4.00 basis - Major 3.9 on 4.0 basis
Dean's Honor List - Four Semesters
Kappa Delta Pi Education Honor Society
Phi Kappa Phi Honor Society

TEACHING AND RELATED EXPERIENCES

Type	Date(s)	Organization and Location	Supervisor
Preschool Assistant	March 1986	Pied Piper Nursery School Hamilton, IL	Ms. Barbara Hanson Teacher
Student Teaching	Spring, 1986	George Washington Elementary School, Keokuk, IA	Ms. Marilyn Vaulkerson Fifth Grade Teacher
Participate Teaching	Fall, 1984	St. Paul's Elementary School Macomb, IL	Mrs. Patricia Vietti Fourth Grade Teacher
Water Safety Instructor	Summer 1981, 1982	Hamilton Swimming Pool Hamilton, IL	Mr. Ed Lemon Manager

WORK EXPERIENCE

Type	Date(s)	Organization and Location	Supervisor
Secretary	9/81-6/83 2/84-4/84 (part-time)	Eichacker, Miller and Russell Keokuk, IA	Mr. Greg Miller
Lifeguard	Summer, 1978 1979, 1981	Hamilton Swimming Pool Hamilton, IL	Mr. Ed Lemon, Manager

ACTIVITIES (high school)

National Honor Society, President–Senior Class, Basketball, Softball, Volleyball, 4-H President

REFERENCES

Credentials available from the Occupational Information and Placement Office, Western Illinois University, Macomb, IL 61455

Appendix D

Jerry M. Smith

609 West Adams
Macomb, IL 61455
(309) 555-1001

Job Objective

Position involved in the field of electronic publishing, including instructional media, desktop publishing, and animation. Prefer management level position, or management track position with growing company.

Education

Graduated December 1991 *Summa Cum Laude* from Western Illinois University with a B.S. in Media and Education Technology; emphasis in computer technology and photography. Minor in Graphic Arts with emphasis in electronic publishing and management. Specifically related courses include Educational Micro Computing, Computer Upgrade and Repair, three Independent Study courses (involved in the production of graphics on a Macintosh computer), Print Production Management, Introductory and Advanced Desktop Publishing, Computer-Assisted Design, and Print Production Management Practices.

Experience

Academic Computing, Western Illinois University
2 years as computer lab manager/file server administrator. Responsible for installation and maintenance of Macintosh Apple Share file server network, and for the supervision of three lab assistants.

Visual Production Center, Western Illinois University
2 years as computer graphics specialist. Responsible for the production of graphic elements to be used in printed and electronic presentation materials.

Department of Elementary Education and Reading, Western Illinois University
Graduate assistant working with interactive computer programming using Authorware Professional. Created demonstration models to acquaint students with interactive computer-assisted instruction.

References and portfolio available on request.

HOPE U. DO-WELL

Present Address:
535 East Maple Street
Macomb, IL 61455
(309) 836-2574

CAREER OBJECTIVE: Professional Secretary

EDUCATION:

Summer, 1984	Carl Sandburg College, Galesburg, Illinois
1984-1988	Illinois Central College, East Peoria, Illinois Court Reporting Program
1964-1968	Roseville High School, Roseville, Illinois

WORK EXPERIENCE:

1988-present	Western Illinois University Department of Media and Educational Technology Horrabin Hall 39 Secretary to Department Chair and 10 faculty members
1982-present	Owner/Co-Manager of J & R's Rollerland Roseville, Illinois
1983-1984	Innovative Printed Products Roseville, Illinois Office Manager, Secretary
1979-1983	Roseville State Bank Teller, 2 years Secretary to Bank President, 2 years
1968-1969	Western Illinois University Department of International Studies Secretary for Dr. John G. Westover

INTERESTS: Sports Activities, Cross Stitching, Reading

REFERENCES: Available upon request

Evaluating Educational Software

Objectives

At the completion of this unit, you will be able to

- Identify and describe the major ways in which a computer can be used as a tutor in instruction.

- Identify and describe the major issues and criteria to consider when evaluating educational software.

- Evaluate several types of educational software according to relevant criteria.

Resources to be Used

Readings
The following readings are taken from Merrill, P. F., Tolman, M. N., Christensen, L., Hammons, K., Vincent, B. R., & Reynolds, P. L. (1992). *Computers in Education* (2nd ed.). Englewoods Cliffs, NJ: Prentice-Hall.

- "Software Evaluation"
- "Drill-and-Practice Applications"
- "Tutorial Applications"
- "Problem Solving, Simulations, and Games"

Software
In this part of the workbook, you will be evaluating several educational software programs. You may select the programs of your choice from hundreds of educational software programs available in the Horrabin Hall Computer Lab and on the MS-DOS and Macintosh Local Area Networks (LANs) at WIU. These educational programs are available on the following computer systems (hardware platforms):

- **Apple IIe software**. Currently, most of the educational software available in the lab has been developed for the Apple IIe computers. These programs have been developed by a variety of software companies such as MECC, Sunburst, Broderbund, and so on.

- **Apple II GS software**. The Apple II GS is one of the newer Apple II series computers. It has superb color and sound capabilities. The lab has a few programs that are especially designed for this computer. In addition, most of the software designed for the Apple IIe computer will also run on the Apple II GS computer.

- **Macintosh software**. The Macintosh computer is designed to be user-friendly. Once you learn to use one Macintosh application, it is very easy to learn others. Most of these programs are available on the Macintosh LAN; however, a few programs need to be checked out from the lab assistant in the Horrabin Hall Computer Lab.

- **IBM PC/MS-DOS software**. MS-DOS computers represent the most common machines available in the microcomputer market. Some educational programs will only work from a floppy disk and need to be checked out from the lab assistant. In addition to these programs on floppy disks, there are many educational programs available on the MS-DOS LAN, located on the PGM fileserver.

To help you in the selection process, the Educational Software Catalog is available in the Horrabin Hall Computer Lab. This catalog lists all the educational software programs, computer platform, type of program (drill and practice, tutorial, game, and so on), subject matter content, and grade level.

Background

If you aren't aware of it already, you would be very surprised at the quantity of educational software being produced in America. Already the amount and diversity of educational software in existence makes it impossible for any one person to be acquainted with more than a small fraction of what is available on the market today. Not all of the software being produced is the best quality, but in the last few years, the quality of the majority of the software being marketed has increased tremendously.

Because computers are such powerful, diverse tools, the types of educational software that can be created are literally endless. Today you can buy educational software for almost any conceivable subject being taught in the public schools, from English to sex education. New creative uses for computers in education are constantly being explored and the quality of some of the resulting products is astounding. The exciting thing is, there is no end in sight. The computer offers us a tool that truly tests the limits of our ability to produce creative educational materials.

Learning to evaluate educational software is no easy task; it takes much more than reading a few chapters in a textbook and looking at a few software programs. Learning to evaluate software is a lot like learning to evaluate art, music, or literature: you must (1) learn what to look for; and (2) have a lot of exposure to both high and low quality products. In addition, you will not get a good feel for what type of software "works" and what doesn't until you get a chance to actually use a variety of software programs with real students. This is a process that occurs *over time*. The more experience you have with educational software, the more opportunity you will have to develop good evaluating skills. The purpose of these software assignments is to help you to increase both your exposure to educational software and your ability to evaluate them. No matter what experience you have had in the past, you can use this opportunity to increase your understanding of how software can be used in educational settings.

Software programs come in all shapes and sizes. Some are clear, easy-to-use, and educationally powerful. Others are confusing, frustrating to use, and have almost no educational value. *You are welcome to try out as many pieces of software as you would like.* The more you get to see, the better idea you will have of what kinds of educational software exist. Remember, in order to develop good software evaluating skills, you must take the time to evaluate a lot of software. To do a good job of evaluating a piece of software, you must spend more than a few minutes with it. While some of the software in the lab is very clear and simple to use, other equally excellent pieces take a lot more time to understand. Don't make the mistake of assuming that a piece of software is no good just because you can't figure it out in a few minutes. Spending a little more time with a piece of software is often very rewarding. Spending too little time, on the other hand, often results in frustration and an inaccurate perception of the value of a piece. Of course, some of the software in the lab is simply poor software. Viewing poor software provides an important contrast with superior software that will help you to pick out the elements that make a piece of software good or bad.

Many sophisticated pieces of software require that you spend some time reading the documentation (instructional manual) that comes with it before you can begin to get a good grasp of how it can be used. Most of the software in the lab comes with documentation. This documentation is invaluable for helping you to obtain an overview of a piece of software. Most good documentation will also give you some excellent suggestions on how the piece may be used in the classroom, including some "before" and "after" activities to use with the software.

The software assignments in this chapter are divided using the categories described in the readings: drill and practice, tutorial, problem-solving, simulations, and games. You should realize, however, that *these categories are not set in concrete*. They are merely *one* of several different ways of looking at different types of educational software. When people design software, they most likely do not have these categories in mind, so many software programs have elements of several different categories. You may feel, for example, that one of the programs listed in the catalog under drill and practice is much more like a tutorial program. The category a program is listed under is *not* what is most important; some of the categories may, in fact, be misleading. What *is* important is whether a student can use the software program to learn things that are worth learning.

The value of a particular software program depends on how it is used. Keep this in mind when you are looking at the various programs. An excellent piece of software may be put to very poor use; likewise, a relatively bad piece of software may be used by a creative teacher in a way that is very valuable for the students. *In almost every case, the creativity of the teacher is more important than the quality of the software.*

Why spend time viewing educational software? What do you expect to learn from this experience? Are you excited about increasing your knowledge and understanding of the types of software that are available? Are you interested in learning how to be a better evaluator of educational software? How will these assignments help you to be a better educator?

It is important that you take the time to consider your responses to these questions. Unless you have a purpose for completing these assignments that is more compelling than the fact that it is "required," it is likely that the time you will spend will seem like busywork. These assignments are designed to be flexible enough so that *you* can get what *you* want from them. In order to accommodate the wide variety of interests and needs of all the students who take this class, you are given a lot of latitude in deciding how you want to spend your time on these assignments. If you use your time constructively and *think* about what you are learning, you can expect to learn a lot. On the other hand, if you are just putting in the time to get the assignment done, you can expect to get as little out of it as you put in.

Learning how to evaluate software skillfully is not easy. It takes time and experience. If you have not had a lot of previous exposure to educational software, don't be surprised if you feel a little confused at first. Be persistent and don't get discouraged. Don't try to complete the assignments in one sitting. That is enough to make anyone sick of computers! Take your time, think about what you are doing, and *have fun*. This is your time to explore the world of educational software. If you try to make the most of it, you won't be disappointed.

Assignments

Assignment #1: Using Software Evaluation Checklists

For this lesson, you will select three educational programs available in the lab and evaluate each program, based on the software evaluation criteria checklists provided at the end of this part of the workbook. You will evaluate an educational program which runs on each computer platform represented in the lab: Apple II computers, Macintosh, and MS-DOS. In addition, you will evaluate three of the five different types of educational software: drill and practice, tutorial, problem-solving, simulation, or game.

Step 1 Ask the lab assistant in the computer lab to give you *The Educational Software Catalog*. This catalog lists the educational software available in the lab by different categories (e.g., by subject matter, age level, type of application, and so on).

Step 2 From *The Educational Software Catalog*, choose a software title to review which is of interest to you. For the first educational program which you choose to evaluate, you may find it helpful to first go to one of the major sections in the catalog which lists the programs (e.g., subject matter, type of application, and so on). For example, if you are interested in Math educational programs, go to the Subject Matter section and choose a program listed in the Math related programs. After you have selected the software title you would like to review, determine which type of computer will run this program. This information is contained in a field following the title of the software listed in the catalog.

For the *Apple II* programs, you need to ask the lab assistant to give you the program disk and manual. Be sure to select a program that was *not* demonstrated in class. You will not receive any credit if you review a program which was demonstrated in class. The lab assistant will give you the disk and the documentation for this program. If you have any problems loading the Apple II program disk, please ask a lab assistant for help.

If you selected a *Macintosh* program, ask a lab assistant for the program manual which is on the computer lab shelves, then locate the program in the Mac.Sys fileserver by logging onto the Mac.Sys fileserver, opening the MacPrograms folder, and then opening the COE Educational Software folder.

If you selected an *MS-DOS* program, some of the programs are on floppy disks which the lab assistant will check out to you, and other programs are on one of the MS-DOS fileservers. If you selected a program which is on a floppy disk, ask a lab assistant for this program disk and accompanying manual. If you selected a program on the fileserver, you must first login to one of the student fileservers (stu1, stu2, or stu3). Ask a lab assistant to help you login to one of the student fileservers, so you are at the menu screen. From the menu screen, use the arrow keys to select the menu item *O) Other Programs (PGM Server)*. From this menu, select the option *C) Class Programs*. From this menu, select the option *9) IE&T and Education*. You will see a selection of several EC 209 programs available (such as EC 209: Treehouse or EC 209: Data Insights). Select one of these programs and follow the directions in the manual for using the program.

Step 3 Take a few minutes to look over the documentation that comes with the program. (If you don't have the documentation, ask the lab assistant for help.) Note the kind of information available in the documentation, especially the teaching suggestions and suggested student activities (if any).

Step 4 Review the software program. After you have run the program and know how it works, classify the type of program based on the five categories discussed in the readings (i.e., drill and practice, tutorial, problem-solving, simulation, or game). After classifying the program, use the appropriate evaluation checklist located at the end of this chapter for evaluating the program. The checklists have been copied on perforated paper so you may tear them out of the book in order to hand in as part of the assignment. *Be complete*. If one of the questions doesn't apply, write *NA* (*N*ot *A*pplicable).

Step 5 Write a brief review of the educational program. To do this, imagine that you are a teacher and your principal has asked you to review these software programs. She or he is considering buying some new programs for the school and would like you to give your recommendation. What information do you think the principal would need to know about the software in order to make a good decision? What would you need to do to provide her or him with this information?

As you review each software program, keep these questions in mind. After you have completed the checklist, write up a summary of your evaluation of this program. Your summary should be written on a word processor and must include three paragraphs: (1) a summary of the quality of the program based on the instructional criteria and the presentational criteria, (2) a brief discussion of the program's major strengths and weaknesses, and (3) a recommendation to your principal about whether or not to purchase the program. Your summary needs to include all three paragraphs to receive full credit.

Important: Remember that software developers do not develop software with these checklists in mind. A good piece of software will not necessarily contain all of the features listed in the checklists; the checklists are used simply to remind you of things to look for while you are reviewing the software. The Instructional and Presentational Criteria listed come from the readings.

Step 6 Repeat steps 2-5 above for two more educational software programs, so that you have evaluated one program which runs on an Apple II series computer, one program which runs on a Macintosh, and one program which runs on an MS-DOS machine. In addition, make sure that the three programs which you evaluated represent three different types of educational programs (i.e., drill and practice, tutorial, problem-solving, simulation, or game). When you are done, you should have viewed *three* different software programs and filled out a separate checklist for *each* of them.

Step 7 Staple the three summary evaluations you printed for each program you reviewed to the appropriate checklists. Turn all three checklists into the instructor at the same time. All three checklists should be paper clipped together so they are submitted as one assignment. Points will be deducted from your total score if the assignment is not turned in as previously described. Again, you will not receive any credit if you submit a checklist on one of the software programs demonstrated in class.

Assignment #2: Educational Software Investigation

In this assignment you have the opportunity to investigate the rich variety of software programs available in the lab. The purpose of this assignment is to give you an opportunity to learn more about the types of educational software available. In order to accommodate your needs and interests, this assignment is designed to be flexible and offer you the maximum amount of choice in the software you investigate. This assignment has two parts.

Part I

In the first part of this assignment, you will spend one hour reviewing educational software programs in the Computer Lab. You may choose to do either (or both) of the following options listed below for this assignment. You need to keep track of the programs you review and the amount of time you spend on the form "Assignment #2: Software Investigation Assignment Sheet," located at the end of this chapter. It does not matter if you spend all your time on one program or on dozens of programs. *Do what you feel will be of most value to you.* The only requirements are that you spend at least one hour, and that you must pick *different* programs than you used for your Software Checklists Assignment #1. You will not receive credit for this part of the assignment if you list software programs which you also reviewed for the previous assignment.

Remember: Pick *different* programs than you used for the Software Checklists assignment.

1. **Use *The Educational Software Catalog* to find some of the educational software programs you would like to view.**

   In *The Educational Software Catalog*, there are descriptions of each of the programs available in the Computer Lab. You could choose to investigate software in a specific type of application (i.e., drill and practice, simulations, and so on) or grade level (e.g., high school), or a specific topic (e.g., biology). Or you may choose to investigate a wide variety of software programs. If you cannot find the type of program you want, you may want to ask the lab assistant for suggestions.

2. **Compare "some good" with "some not so good" software.**

   No one can categorically label a piece of software "good" or "bad." The worth of a piece of software has a lot to do with your *purpose* in using it and *how* you use it. An "excellent" piece of software by one person's standards may be terrible by another person's standards. This is not simply an arbitrary difference of opinion. People use software for many different reasons, with many different types of students, and in combination with many different types of supplementary learning activities. Some teachers are very creative in exploiting the strengths of any software program. Other teachers want to be able to use software in their classrooms without having to do anything but hand students the disk. For all these reasons, and more, the programs that appear in the following lists may or may not match your ideas of good or bad software. *You* decide whether you agree or not.

SOME GOOD	SOME NOT SO GOOD
To be announced in class	To be announced in class

Part 2

Read through educational computer journals and magazines for a minimum of 30 minutes. (You are welcome to read as much as you like, but you should read at least *30 minutes* to complete this part of the assignment.) You may want to browse through several articles or read one or two specific articles.

There are several educational computer *journals* and *magazines* produced for both public school teachers and other educators in the Periodical Library (third floor of the University Library). The following is a list of several suggested journals available in the Current Issues section:

Computing Teacher
Electronic Learning
Media & Methods
Tech Trends
Technology Teacher

In addition, there is an excellent educational computing journal in the Curriculum Lab (Horrabin Hall 72) entitled *Technology and Learning*. You will also find copies of two Macintosh magazines, *MacWorld* and *MacUser* in the Curriculum Lab.

You need to keep track of the computer journals and magazines you review and the amount of time you spend on the form "Assignment #2: Software Investigation Assignment Sheet."

Assignment #3: Software Reflections Paper

The purpose of the Software Reflections Paper is to give you a chance to pull together some of your thoughts on what you have learned about educational software through your experiences in this course. Each of you began this course with a different degree of exposure to educational software, and because each of you have very unique interests and needs, you have each had a unique experience during the course. No matter where you started from or where you are now, this paper will give you an opportunity to think about what you have learned and what meaning it has for you.

Using a word processor of your choice, write a two-page paper in which you describe what you have learned about educational software during this course. In writing your paper, you may want to think about the following questions:

1. What *new discoveries* have you had about educational software?
2. What has *surprised* you about the educational software available?
3. What has *disappointed* you about educational software?
4. As a result of your experiences, what ideas have occurred to you about using educational software with students?
5. Do you feel you have had *enough exposure* to educational software to decide how you feel about using computers in the schools?
6. How *confident* do you feel in your ability to evaluate and/or use educational software?
7. What would you like to do to *increase your ability* to evaluate and/or use educational software?

You don't need to answer these exact questions. They are just here to get you thinking about how you feel about educational software. Please do not make the mistake of assuming that there is a "right" or "wrong" answer to these types of questions. Be honest in your reflections. If the programs you looked at were terrible, or you feel that schools should *not* use *any* type of educational software, write these feelings down. This paper is to help *you* explore *your* feelings. It is *not* to help the *instructor* see whether you learned all the "right" responses.

Your paper must be done on a word processor. The paper does not need to be a full two pages, but it must be more than one page. You will *not* be penalized if you write more. Proofread and spellcheck your paper before submitting it. Specify your name, section number, date, and SE #3 in the header of the document. Feel free to use some of the things you learned from Word Processing Assignment #3 as you format and print your document.

Grading Criteria

The grading criteria for these assignments are based on the degree to which your assignment meets the criteria specified in this chapter. If your assignment meets all of the criteria specified, then you will receive full credit, or a grade of 100%. The following scale will be applied for assignments which do not receive full credit. Each assignment should be submitted as an individual assignment; please do not staple several individual assignments together when you submit them.

Criteria for Assignments

100%	Meets all of the specified criteria
90%	Meets almost all of the specified criteria, one item missing or incorrect
80%	Meets almost all of the specified criteria, two items missing or incorrect
70%	Meets most of the specified criteria
60%	Meets a little more than half of the specified criteria
50%	Meets about half of the specified criteria
40%	Meets less than half of the criteria
30%	Meets few, if any, of the specified criteria, but more than doing nothing

Review

Key Concepts

1. Computer-Assisted Instruction
2. Computer-Based Education
3. Drill-and-Practice Programs
4. Events of Instruction
5. Fidelity
6. Intelligent Tutoring Systems
7. Intelligent Computer-Assisted Instruction
8. MECC
9. Page Turners
10. Passive Simulation
11. Problem-Solving Programs
12. Simulation Programs
13. Subject-Centered Problem-Solving Software
14. Tutorial Programs

Review Questions

1. Explain why teachers should be educated evaluators of educational software.

2. Briefly describe the terms "Instructional Criteria" and "Presentational Criteria."

3. Briefly describe the four steps involved in evaluating educational software according to instructional criteria.

4. What is the most ideal way to evaluate software?

5. What is the primary purpose of drill-and-practice programs?

6. What are some of the advantages of using computer drill-and-practice programs over flashcards?

7. In the use of drill-and-practice techniques, it was suggested that a system be implemented which includes a working pool. What is the number of items suggested for the working pool at any given time?

8. What kind of skills are MOST appropriate for use in a drill-and-practice program?

9. What is the main objective of tutorial applications?

10. Briefly describe how the nine events of instruction can be included in tutorial programs.

11. How is the value of a simulation determined?

12. Give an example of a static simulation.

13. How realistic do simulations have to be?

14. What are the critical attributes of educational games?

15. In what ways can uncertain outcomes be attained in educational game programs?

Drill-and-Practice Evaluation Checklist

Name ______________________________ Sec. ________ Date ______________

Title of the Program ____

Software Producer ________________________ Computer Platform ______________

Instructional Criteria

General Issues

A. What are the learning objectives of the software?

B. Does the program use an instructional strategy appropriate to the application and learning outcome?

C. Are the examples and illustrations appropriate for the intended grade level?

D. Are good quality tests and quizzes included?

E. Does the program fit the current curriculum, or can it be modified to fit the curriculum?

Specific Drill-and-Practice Issues

A. Does the program pretest?

B. Does the program allow the learner to specify level of difficulty?

C. Within a level of difficulty, does the program provide a simple-to-difficult progression?

D. Does the program allow students to specify how many problems to do?

E. Does the program snow the problem number the student is on?

F. Does the program practice on a small subset of items?

G. Does the program replace learned items with new ones?

H. Does the program randomly present the items?

I. Does the program give hints if the student has difficulty on an item?

J. Does the program keep a student profile automatically and use this profile to determine material for the following session?

K. Does the program periodically review learned items?

L. Does the program have gaming properties (to keep interest up)?

(Continued on next page)

Drill-and-Practice Evaluation Checklist (continued)

Presentation Criteria
2=Good 1=Fair 0=Poor NA=Not Applicable

Screen Format
______ A. Avoids busy, cluttered screens; uses blank space liberally
______ B. Screen elements take advantage of natural eye movement
______ C. Good use of graphics
______ D. Flashing text, underlining, use of color, and other forms of highlighting are used well and do not distract
______ E. Uses correct spelling and grammar

Paging
______ A. Gives clear instructions on how to move from one page to the next
______ B. Requires response before proceeding to a new page; avoids display time-outs
______ C. Where appropriate, allows the student to page forward and backward through the program
______ D. Does not require the student to attend to two different things on the screen simultaneously
______ E. Avoids scrolling when accessing new material

Ease of Use
______ A. Provides menus and/or special commands that enable the student to go easily from one part of the program to another
    ______ 1. Keys used are *mnemonically* related to the purpose of the command
    ______ 2. Keys used to execute commands are consistent throughout the program
    ______ 3. All possible alternative commands are made clear
    ______ 4. A minimum of keystrokes is required to execute any command

______ B. Instructions are clear, simple, and concise
    ______ 1. The student has the option to skip lengthy instructions
    ______ 2. The student is told what to do next at critical points in the program
    ______ 3. Instructions are available both on-line and off-line

______ C. Minimal time is required to generate the title page
______ D. Messages are provided to inform the student of noticeable pauses in a program

Interaction
______ A. The interactive capabilities of the computer have been well used
______ B. The student is allowed to correct typing mistakes
______ C. Correct feedback is available when students enter the incorrect answer to questions or problems
______ D. The number of times students iterate through try-again loops is minimized

Documentation
______ A. The documentation is clear and complete
______ B. The documentation includes suggestions for classroom use of the software program

Notes/Recommendation:

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Tutorial Evaluation Checklist

Name ________________________________ Sec. ______ Date ________________

Title of the Program ____

Software Producer ______________________ Computer Platform ______________

Instructional Criteria

General Issues

A. What are the learning objectives of the software?

B. Does the program use an instructional strategy appropriate to the application and learning outcome?

C. Are the examples and illustrations appropriate for the intended grade level?

D. Are good quality tests and quizzes included?

E. Does the program fit the current curriculum, or can it be modified to fit the curriculum?

Specific Tutorial Issues

A. Does the program use all of the "nine events of instruction"?

B. Is this tutorial able to carry the full burden of instruction? Why or why not?

C. Is the application more than an "electronic page turner"?

D. How interactive is this program?

E. Is the program response sensitive (i.e., branches according to student's response, provides feedback according to response)?

F. Is the program "computer controlled" or "learner controlled"? Is this appropriate?

(Continued on next page)

Tutorial Evaluation Checklist (continued)

Presentation Criteria

2=Good 1=Fair 0=Poor NA=Not Applicable

Screen Format

______ A. Avoids busy, cluttered screens; uses blank space liberally
______ B. Screen elements take advantage of natural eye movement
______ C. Good use of graphics
______ D. Flashing text, underlining, use of color, and other forms of highlighting are used well and do not distract
______ E. Uses correct spelling and grammar

Paging

______ A. Gives clear instructions on how to move from one page to the next
______ B. Requires response before proceeding to a new page; avoids display time-outs
______ C. Where appropriate, allows the student to page forward and backward through the program
______ D. Does not require the student to attend to two different things on the screen simultaneously
______ E. Avoids scrolling when accessing new material

Ease of Use

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    ______ 2. Keys used to execute commands are consistent throughout the program
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    ______ 4. A minimum of keystrokes is required to execute any command

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    ______ 1. The student has the option to skip lengthy instructions
    ______ 2. The student is told what to do next at critical points in the program
    ______ 3. Instructions are available both on-line and off-line

______ C. Minimal time is required to generate the title page
______ D. Messages are provided to inform the student of noticeable pauses in a program

Interaction

______ A. The interactive capabilities of the computer have been well used
______ B. The student is allowed to correct typing mistakes
______ C. Correct feedback is available when students enter the incorrect answer to questions or problems
______ D. The number of times students iterate through try-again loops is minimized

Documentation

______ A. The documentation is clear and complete
______ B. The documentation includes suggestions for classroom use of the software program

Notes/Recommendation:

Simulation Evaluation Checklist

Name ______________________ Sec. _______ Date ______________

Title of the Program ______________________________________

Software Producer ______________________ Computer Platform ______________

Instructional Criteria

General Issues

A. What are the learning objectives of the software?

B. Does the program use an instructional strategy appropriate to the application and learning outcome?

C. Are the examples and illustrations appropriate for the intended grade level?

D. Are good quality tests and quizzes included?

E. Does the program fit the current curriculum, or can it be modified to fit the curriculum?

Specific Simulation Issues

A. What is the phenomenon or real-world experience that is being simulated?

B. Will students have the necessary background to benefit from the simulation?

C. Does the simulation have an appropriate level of fidelity?

D. Will the simulation gain and maintain the interest of the students?

E. Will the students come to correct conclusions with regard to the phenomena under study after having participated in the simulation? Why or why not?

F. Will the attitudes, concepts, principles, and skills learned from the simulation transfer to real-life situations? Why or why not?

(Continued on next page)

Simulation Evaluation Checklist (continued)

Presentation Criteria
2=Good 1=Fair 0=Poor NA=Not Applicable

Screen Format

______ A. Avoids busy, cluttered screens; uses blank space liberally
______ B. Screen elements take advantage of natural eye movement
______ C. Good use of graphics
______ D. Flashing text, underlining, use of color, and other forms of highlighting are used well and do not distract
______ E. Uses correct spelling and grammar

Paging

______ A. Gives clear instructions on how to move from one page to the next
______ B. Requires response before proceeding to a new page; avoids display time-outs
______ C. Where appropriate, allows the student to page forward and backward through the program
______ D. Does not require the student to attend to two different things on the screen simultaneously
______ E. Avoids scrolling when accessing new material

Ease of Use

______ A. Provides menus and/or special commands that enable the student to go easily from one part of the program to another
    ______ 1. Keys used are *mnemonically* related to the purpose of the command
    ______ 2. Keys used to execute commands are consistent throughout the program
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    ______ 3. Instructions are available both on-line and off-line

______ C. Minimal time is required to generate the title page
______ D. Messages are provided to inform the student of noticeable pauses in a program

Interaction

______ A. The interactive capabilities of the computer have been well used
______ B. The student is allowed to correct typing mistakes
______ C. Correct feedback is available when students enter the incorrect answer to questions or problems
______ D. The number of times students iterate through try-again loops is minimized

Documentation

______ A. The documentation is clear and complete
______ B. The documentation includes suggestions for classroom use of the software program

Notes/Recommendation:

Problem-Solving Evaluation Checklist

Name ______________________________ Sec. ________ Date ________________

Title of the Program ____

Software Producer __________________________ Computer Platform __________________

Instructional Criteria

General Issues

A. What are the learning objectives of the software?

B. Does the program use an instructional strategy appropriate to the application and learning outcome?

C. Are the examples and illustrations appropriate for the intended grade level?

D. Are good quality tests and quizzes included?

E. Does the program fit the current curriculum, or can it be modified to fit the curriculum?

Specific Problem-Solving Issues

A. Are the problems hard enough to be challenging, yet simple enough to be completed?

B. Do the solutions to the problems require more from students than recall of previously learned rules?

C. How does this program encourage students to be creative?

D. How will logic and problem-solving skills be developed through use of this program?

E. Is the program interesting enough to hold the attention of the students? For how long?

(Continued on next page)

Problem-Solving Evaluation Checklist (continued)

Presentation Criteria
2=Good 1=Fair 0=Poor NA=Not Applicable

Screen Format

______ A. Avoids busy, cluttered screens; uses blank space liberally
______ B. Screen elements take advantage of natural eye movement
______ C. Good use of graphics
______ D. Flashing text, underlining, use of color, and other forms of highlighting are used well and do not distract
______ E. Uses correct spelling and grammar

Paging

______ A. Gives clear instructions on how to move from one page to the next
______ B. Requires response before proceeding to a new page; avoids display time-outs
______ C.- Where appropriate, allows the student to page forward and backward through the program
______ D. Does not require the student to attend to two different things on the screen simultaneously
______ E. Avoids scrolling when accessing new material

Ease of Use

______ A. Provides menus and/or special commands that enable the student to go easily from one part of the program to another
    ______ 1. Keys used are *mnemonically* related to the purpose of the command
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    ______ 3. Instructions are available both on-line and off-line

______ C. Minimal time is required to generate the title page
______ D. Messages are provided to inform the student of noticeable pauses in a program

Interaction

______ A. The interactive capabilities of the computer have been well used
______ B. The student is allowed to correct typing mistakes
______ C. Correct feedback is available when students enter the incorrect answer to questions or problems
______ D. The number of times students iterate through try-again loops is minimized

Documentation

______ A. The documentation is clear and complete
______ B. The documentation includes suggestions for classroom use of the software program

Notes/Recommendation:

Game Evaluation Checklist

Name ______________________________ Sec. ________ Date ______________

Title of the Program ____

Software Producer ______________________ Computer Platform ______________

Instructional Criteria

General Issues

A. What are the learning objectives of the software?

B. Does the program use an instructional strategy appropriate to the application and learning outcome?

C. Are the examples and illustrations appropriate for the intended grade level?

D. Are good quality tests and quizzes included?

E. Does the program fit the current curriculum, or can it be modified to fit the curriculum?

Specific Game Issues

A. What is the goal of the game?

B. What types of skills or information can the game help student(s) to learn?

C. Is the game fun to play?

D. Does the game provide . . .
- scoring?
- audio effects?
- visual effects?
- randomness?

E. Does the game provide appropriate feedback?

F. Does the game provide "sensory curiosity"?

G. Does the game provide "cognitive curiosity"?

H. Does the game involve novel or surprising elements?

I. Does the game provide several skills levels?

(Continued on next page)

Game Evaluation Checklist (continued)

Presentation Criteria
2=Good 1=Fair 0=Poor NA=Not Applicable

Screen Format
______ A. Avoids busy, cluttered screens; uses blank space liberally
______ B. Screen elements take advantage of natural eye movement
______ C. Good use of graphics
______ D. Flashing text, underlining, use of color, and other forms of highlighting are used well and do not distract
______ E. Uses correct spelling and grammar

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Ease of Use
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Interaction
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______ B. The student is allowed to correct typing mistakes
______ C. Correct feedback is available when students enter the incorrect answer to questions or problems
______ D. The number of times students iterate through try-again loops is minimized

Documentation
______ A. The documentation is clear and complete
______ B. The documentation includes suggestions for classroom use of the software program

Notes/Recommendation:

Assignment #2
Software Investigation Assignment Sheet

Name ______________________ Sec. ________ Date ______________

Part 1

For full credit, you need to have spent **at least one hour** on this part of the assignment. List below the names of the software programs you reviewed.

Program	Time

How much total time did you spend looking at educational software programs? ____________

Part 2

For full credit, you need to have spent **at least 30 minutes** on this part of the assignment. List below the names of the computer journals and/or magazines you reviewed and the title of the article(s) you read.

Journal	Time

How much total time did you spend looking at computer journals and/or magazines? ____________

College of Education and Human Services
Western Illinois University
Macomb, Illinois

1996

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Telecommunications for the K-12 Classroom

Dr. Marilyn D. Ward

Ameritech

Western Illinois University

Tools for Teaching with Technology

The WIU Approach
to Integrating Technology
into Teacher Education

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Telecommunications for the K-12 Classroom

Dr. Marilyn D. Ward, Department of Instructional Technology and Telecommunications

Module Context

Course Description

ITT 223 - Educational Microcomputing and Technology. This course enables students to gain expertise in using computers and computer-related technologies in the public schools. It emphasizes computer applications, evaluation and selection of educational software programs, and educational telecommunications.

Course Prerequisites

None

Additional Courses Where Module Could Potentially Fit

Any course which requires students to gather data for use in a research paper, to find resources for the development of curriculum units, or to acquire educational software for use in a curriculum unit

Other Relevant Student Characteristics

Undergraduate students majoring in Elementary Education, Special Education, Bilingual Education, and Secondary Education

Module Focus

Title of the Module

Telecommunications for the K-12 Classroom

Content Area of the Module

Using telecommunications to support teaching and learning

Description of the Module

The emphasis for this module is placed on how to use various telecommunications networks to support teaching and learning activities.

Ameritech Student Outcome(s) Supported

- To evaluate and use communications technologies along with computers and multimedia to support the instructional process.

- To explore, evaluate, and integrate computer/technology-based materials with centralized databases which provide voice, text, and video information (i.e., Prodigy, Illinet, Internet).

- To identify resources for a wide array of academic subjects for elementary and secondary grade levels.

- To identify or design creative uses of telecommunications which develop student skills in problem solving, decision making, data collection, self-paced instruction, research and communications.

- To use communications technologies to enhance personal and professional productivity.

Specific Module Objectives

- To participate in a joint project across a network (e.g., listserv, discussion group, bulletin board, data sharing, or joint authoring project).

- To select a topic of interest and use the Internet to locate public domain or shareware software, multimedia resources, on-line databases, and other resources of value to K-12 teachers and students.

- To use a computer to transmit and receive messages, to search the Internet using a browser, and to retrieve information and software from the Internet.

- To access and effectively search an electronic library on a LAN or the Internet.

- To conduct a multimessage dialog with other students, professors, or professionals via e-mail. Include file transfer as part of the exchange.

- To describe different types of networks (e.g., LAN, WAN, Internet) and how to use them to share information.

Technology Competencies Developed Through the Module

Awareness

Students develop an awareness of the vast scope of information available to teachers and students on the Internet.

Hands-On Experience

Students practice using an electronic discussion group for a group project. They also have opportunities to use Gopher and Web browsers to explore the Internet.

Skills Development

Students regularly use e-mail to communicate with each other and the instructor and to receive and submit assignments. They learn about how LANs and WANs are used for e-mail and Internet access.

Module Contents

Teaching Strategies

The instructor's role is to demonstrate the desired learning outcomes for all the students and provide guided practice as the students develop the desired skills.

The instructor must have demonstration equipment available (e.g., an electronic classroom, an LCD projection panel, or a scan converter) to demonstrate the skills and computer applications. Since most of the learning outcomes are procedural, the learning strategies of demonstration, coaching, and guided practice are the key strategies used. In addition, the instructor models how the applications could be used for personal use as well as in the K-12 classroom.

Learning Strategies

Except during the instructor demonstrations, the students are actively involved in completing the five lessons in the workbook to achieve the desired learning outcomes. They also have required readings pertinent to the topic. Students learn process skills such as cooperative learning when they work with other students to complete some of their assignments.

Ways Students Will Demonstrate Competency

Students demonstrate competency by sending messages to the instructor via e-mail, by joining a listserv maintained by the instructor, by attaching a document to a message sent via e-mail, and by completing the assignments in the workbook. The instructor reviews the assignments and provides feedback to each student.

Ways Students Will Learn How To Use Technology in Their Classrooms

Each of the assignments are focused on how teachers can use telecommunications in their classroom; this enables high transfer opportunities to the everyday work environment.

Module Implementation

Print Materials Needed

A workbook was developed specifically for this module (along with three other core modules). See the Supplementary Materials for an updated version of the module information which is included in the workbook. In addition, students are asked to read articles placed on reserve in the library. These articles change from semester to semester because of the rapidly changing nature of the Internet.

Equipment/Technology Needed

- Access to a Macintosh computer lab in which every student can work at her or his own computer (Students could complete the assignments outside of the lab if they had access to a computer with Internet access.)

- Equipment for software demonstrations (e.g., electronic classroom, LCD projection panel, hi-lumens overhead projector, scan converter)

Software or Other Electronic Media Needed

- Word processing software for writing of assignments

- Telecommunications software (e.g., Eudora, Pine, TurboGopher, Netscape)

Implementation Recommendations

It is critical for the instructor to be prepared for this module by becoming familiar with the software to be used and, perhaps more important, to be a daily Internet user. It is also crucial to have access to the demonstration equipment for every class period.

Because of the changes that are made to the Internet on an almost daily basis, this module will need to be updated at least once a semester and maybe more often.

Supplementary Materials

Telecommunications

Webster's Third New International Dictionary (unabridged) defines telecommunications as follows: (1) communication at a distance (i.e., by cable, radio, telegraph, telephone, or television; and (2) the science that deals with telecommunications.

Communication is the act of sending and receiving a message transmitted via various methods. For example, people transmit messages every day using their voices, body language, and sign language. We will be dealing with another form of communication called telecommunications, which involves transmitting a message via an electronic medium, providing humans with a new, efficient way to communicate with one another.

Objectives

At the completion of this unit, you will be able to

- understand the basic principles of telecommunications.
- describe components of a computer network.
- access information and programs via networks.
- send and receive messages via electronic mail.
- identify some applications of telecommunications to education.
- locate and retrieve public domain software and data files via the Internet.
- participate in a collaborative work group via a network.

Resources To Be Used

Electronic Resources

- Telecommunications floppy diskette
- Student account on campus network

Readings

Several copies of these readings are available in the Horrabin Hall Curriculum Lab (HH72) and in the Reserve Library (2nd floor) of the Main Library under the name of your instructor.

- Title: "The Wired Classroom: American Education Goes Online"
  Watson, Bruce. (1990). The wired classroom: American education goes online. *Computers in education* (5th ed.). Guilford, CT: Dushkin.
- Title: "Observations on Electronic Networks: Appropriate Activities for Learning"
  Levin, James A., Rogers, Al, Waugh, Michael, & Smith, Kathleen. (1993). Observations on electronic networks: Appropriate activities for learning. *The technology age classroom* (pp. 143-148). Wilsonville, OR: Franklin, Beedle and Associates.
- Title: "National Geographic Kids Network: Real Science in the Elementary Classroom"
  Julyan, Candace L. (1993). National Geographic Kids Network: Real science in the elementary classroom. *The technology age classroom* (pp. 193-196). Wilsonville, OR: Franklin, Beedle and Associates.

- Title: "Hands-On Science Projects with Help From Online Networks"
  Solomon, Gwen. (1993). Hands-on science projects with help from online networks. *The technology age classroom* (pp. 197-199). Wilsonville, OR: Franklin, Beedle and Associates.

- Title: "Educational Telecomputing Activities"
  Harris, Julie. (1994). Educational telecomputing activities. *The way of the ferret* (pp. 117-153). Eugene, OR: International Society for Technology in Education.

Software

- Eudora Electronic Mail
- TurboGopher
- Netscape

Background

Telecommunications opens up a whole new world to computer users. A stand-alone computer has a finite amount of storage capacity; however, by being able to log into remote file servers, you can access unlimited data in the form of documents, graphic files (photographs, drawings, video clips), and audio clips among others. You can search vast database files to retrieve information and converse electronically with people hundreds of miles away. You can reach various government departments and agencies and even give audience feedback for such programs as NBC's "Dateline." With today's technology, you can even have two-way audio/video teleconferencing for meetings, seminars, and schoolwork via satellite, microwave link, and even commercial-grade phone lines.

It is the purpose of this unit to familiarize you with the concept of telecommunications and its implications for learning. The knowledge you gain from this unit can be very valuable to you during your education and as you start your career. We do not expect you to become a telecommunications expert, but we do expect you to come away with a basic understanding of telecommunications—how computer networks work and the advantages to having access to a network. As with computers in general, there is much talk about what a network can do in terms of hardware and software. You will hear a lot about speed, compatibility, and other operating terminology. What we see as more important, however, is not what the *machine* can do, but what *you* can do *with* the machine. How you choose to use the technology is the most important issue, and we will approach the subject from that point of view.

History

Today's telecommunications systems owe their very existence to early electronics pioneers such as Samuel Morse, Alexander Graham Bell, and others who worked to develop electronic communication systems. In 1837, Morse received a patent for a telegraph system which sent electronic impulses from one point to another over a wire. A system linking Baltimore and Washington, DC, was established a few years later. Western Union Telegraph Company was founded in 1856 and outlasted the Pony Express, which simply could not keep up with the telegraph's ability to quickly and accurately transmit information over vast distances.

In 1876, Bell received a patent for an analog voice communication device, another name for a telephone. Telephone service spread across the country, and by 1915, it was possible to connect between New York City and San Francisco. The importance of the development of a telephone system cannot be overstated because much of the technology involved would be adapted to provide data communications for computers.

In the 1930s, digital characters were sent via wire and radio in systems known as teletype and telex. Teletype was used to send information across the United States, and telex was an international system. The main differences between telegraph and teletype/telex was the number of characters used and the method used to create them. In telegraph systems, a key-sounder device was used to create an electronic impulse resulting in a series of clicks. These clicks were combined into patterns, which were used to represent characters. Teletype used a typewriter-like device to create many more characters.

These inventions served to further our capability to communicate with each other, and with the coming of computers, to transfer data to multiple users over vast distances. In 1962, a nationwide airline reservation system was introduced which connected thousands of terminals to a large central computer via telecommunications lines. This was the first major commercial application of a data communications network involving computers.

There has been much discussion recently about an "Information Superhighway" that will bring enrichment to our daily lives by providing electronic services such as home shopping, movies on demand, distance education, and library information right to our homes or offices. Promoters are using the analogy of a superhighway to describe the vast network that will connect users to information servers, much like a superhighway connects towns, cities, states, and countries. The actual network cable will serve as the highway itself. The on-ramps will be the method by which we, as users, are connected to the highway. Without telecommunications, this superhighway would be impossible.

After the California earthquake of 1994, telecommunications played a vital role in bringing people back to work. Much of the area's infrastructure was destroyed by the earthquake and its subsequent aftershocks. The Santa Monica freeway, the busiest highway in the world, was reduced to rubble. As a result, what was once a short commute to work, became a nightmare. Companies needing employees back at work found that by using telecommunications, and either setting up regional offices near employees' houses, or by putting equipment in employees' homes, they were able to get back to business. Many companies were so successful that they have established work-at-home alternatives for many of their employees.

Networks and Connectivity

In order to truly understand telecommunications, you need to understand the concept of networks and connectivity. A network is any group of devices physically connected in such a way as to facilitate transfer of information. The telephone is an excellent example of a network. A telephone network consists of several devices all connected to a central hub (the local phone office) which is in turn connected to other hubs. Long-distance dialing is available because the local office is also connected to a line that runs to several additional points. If you were calling San Francisco from Macomb, your call might well be routed from Macomb to Peoria, then to Chicago, then to St. Louis, then to Denver, and then to San Francisco. One important point about networks is that they are dynamic in nature; in other words, the networks can compensate for problems along the way by re-routing the call. For instance, in the above example, if there was a problem at the St. Louis office, the call could be routed through St. Paul, Minnesota, then on to Denver and finally to San Francisco without you knowing about it. The transparency of the technology allows you to make the call without worrying about how you will get through.

Computer networks work in much the same way; several devices are physically connected to a central hub, and data is transferred from a sender to a receiver. If an analogy is drawn between the two, think of each computer as a phone, the network cabling as the phone lines, and the data being sent as the message.

Networks

A single computer hooked to a printer is not a network. Neither are two computers sharing a printer. It is when two or more computers are connected to share information and resources that a true network exists (see Figure 1). As an example, if there were two teachers in a school who had their computers hooked up to the same printer in order to share the printer, they would not have a network. If they wanted to share their information between their computers, they would have to utilize a concept known as SneakerNet, where one's sneakers are the medium. One teacher would have to save the file to a floppy disk, walk it to the other's computer, and copy the file to their hard drive. Then the other teacher could make any necessary changes.

Figure 1
Simple Network

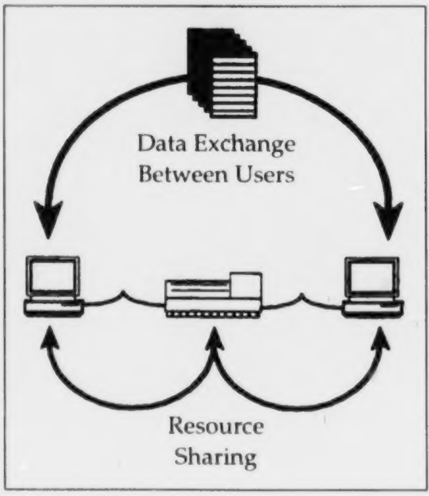
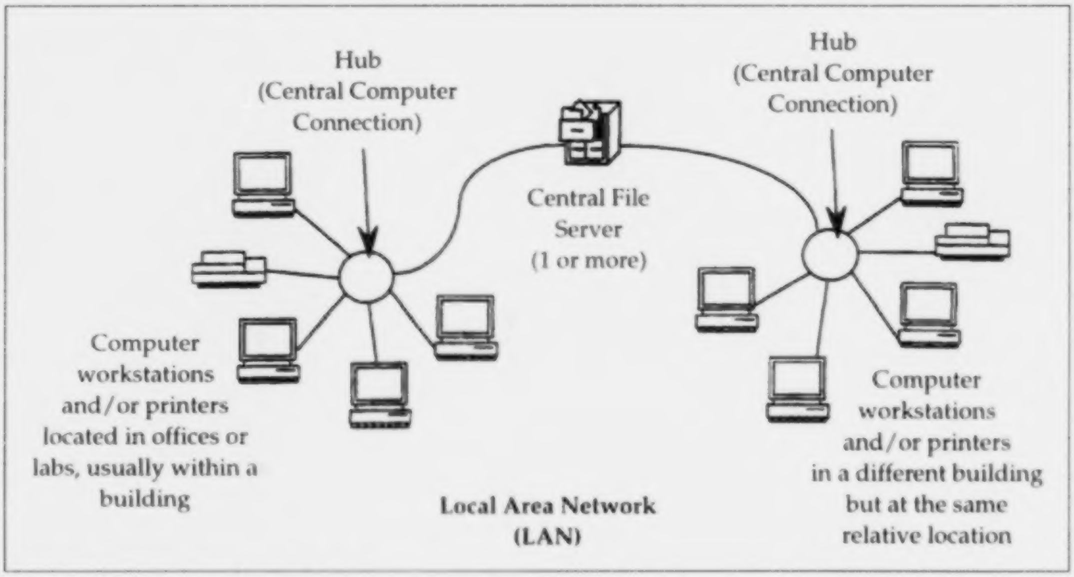


Figure 2
Local Area Network


Hub
(Central Computer
Connection)
Hub
(Central Computer
Connection)
Central File
Server
(1 or more)
Computer
workstations
and/or printers
located in offices or
labs, usually within a
building
Local Area Network
(LAN)
Computer
workstations
and/or printers
in a different building
but at the same
relative location

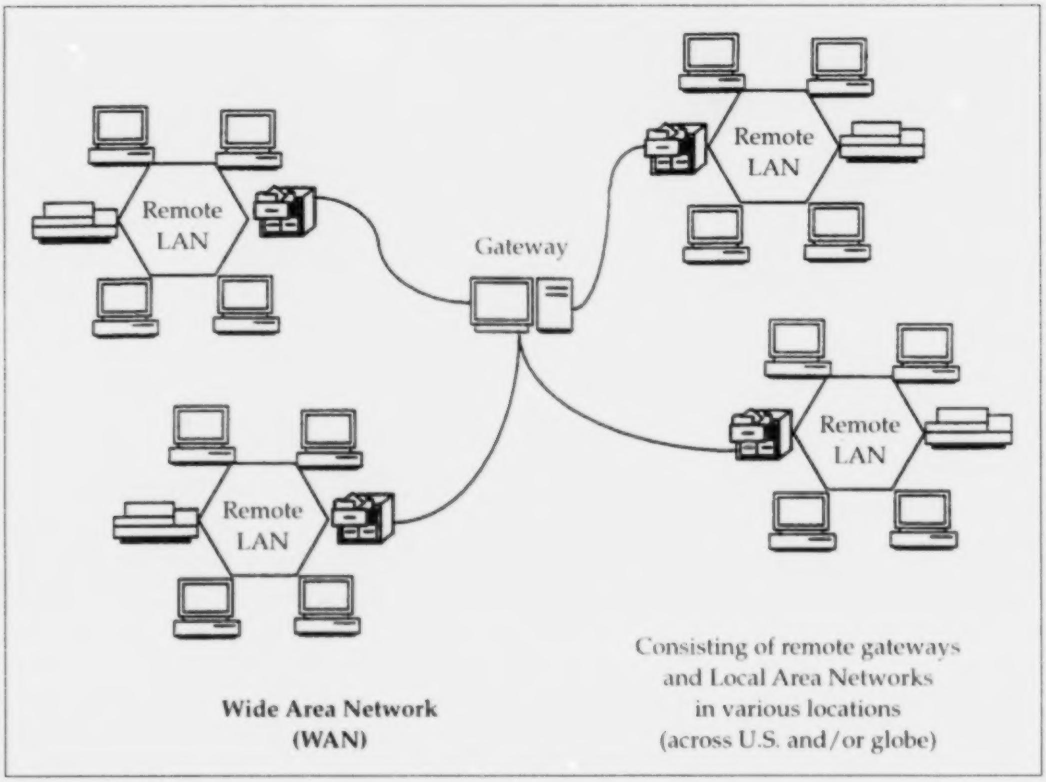
SneakerNet (a.k.a. NikeNet, ReebokNet, and so on) is as cumbersome as it is potentially dangerous. Through the process described, the original file could become several files, each stored in a different location, with different names and different information. Additional time would be required to sort out all the information on each file and determine which is the most accurate and recent. If, on the other hand, both teachers were connected to each other's computer and a printer, they could share information much faster and increase productivity (not to mention save wear and tear on their shoes!). While this example is somewhat extreme, it does serve to demonstrate one of the main reasons computers and networks are so prevalent today: productivity. Increased productivity justifies the cost of a network. This is true for every field from business to education.

Networks can be grouped into two categories: LANs and WANs. A LAN is a Local Area Network, such as the network here at WIU, and a WAN is a Wide Area Network, usually consisting of two or more LANs. LANs consist of several users connected to one or more file servers via one or more hubs (remember that a hub can be thought of as a phone hub, where local users can access long-distance lines) and can be connected to a WAN (see Figure 2). (You have been using a LAN since we started Unit 2's assignments. You logged into a server [Mac.Sys] to download the files you used for the assignments and to access the application [Microsoft Works] which was stored on the server.)

Along with several other universities in Illinois, WIU is connected to a WAN called the Educational Computing Network (ECN). A WAN consists of several LANs connected together via gateways (see Figure 3). A gateway is a device (usually a dedicated computer) that connects different LANs together. Here at WIU we access distant servers via our connection to ECN, which acts as our gateway, connecting our computer to the distant server over the network's cabling.

There are several additional advantages to using a network, among which are the ability to store applications on a central server (thus freeing up disk space on the user's hard drive), accessing shared data and keeping it up-to-date, receiving feedback from peers across a wide geographic area, conducting simultaneous research with distant colleagues, and being able to communicate with a large base of users who have similar interests. The ability to communicate with someone remote from your location via electronic mail (e-mail) is one of the most popular features of telecommunications/networking. In this unit you will use e-mail to send and receive messages from your instructor and others, and a popular program called Gopher to search servers on the Internet.

Figure 3
Wide Area Network



Network Connections

There are two basic methods of connecting a user to a network: modems and NICs. A modem is a device that connects a computer to a standard phone line and converts the computer's digital signals to an analog (see Figure 4). The term modem stands for *Mo*dulate-*Dem*odulate. A modem modulates the outgoing signal and demodulates the incoming signal, allowing the computer to communicate with other computers. Remember that computers utilize a digital means of communicating and that phone lines take advantage of analog signals. A modem simply allows a digital device to use analog media. There are countless modems being used by business, education, and home computer users. Users can connect to a Bulletin Board System (BBS) to download files or connect to a network via a modem only if there is a modem connection on the other end. If a network does not have a modem (and most do), there is no way for a remote user to connect via modem.

Another method of connecting to a network is with a NIC, or Network Interface Card. A NIC is inserted into a slot in the computer's motherboard and provides a direct connection to a network. The NIC also establishes a unique address for that particular computer (see Figure 5). Unlike a modem's connection over a standard phone line, a NIC is connected to dedicated cabling running throughout the network to form a chain of devices. Dedicated cable transfers data signals much faster than standard phone lines, so in most cases, a NIC connection is faster than a modem connection. The NIC serves as the direct link between the computer and the network.

Here at WIU, we use NICs at all computers that are connected to the network (in the labs, faculty/staff offices, and so on), and we have some modem connections available for hook-up by remote computers. Some students have home computers and access their student accounts via a modem.

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Figure 4
Using a Modem To Connect to a Network

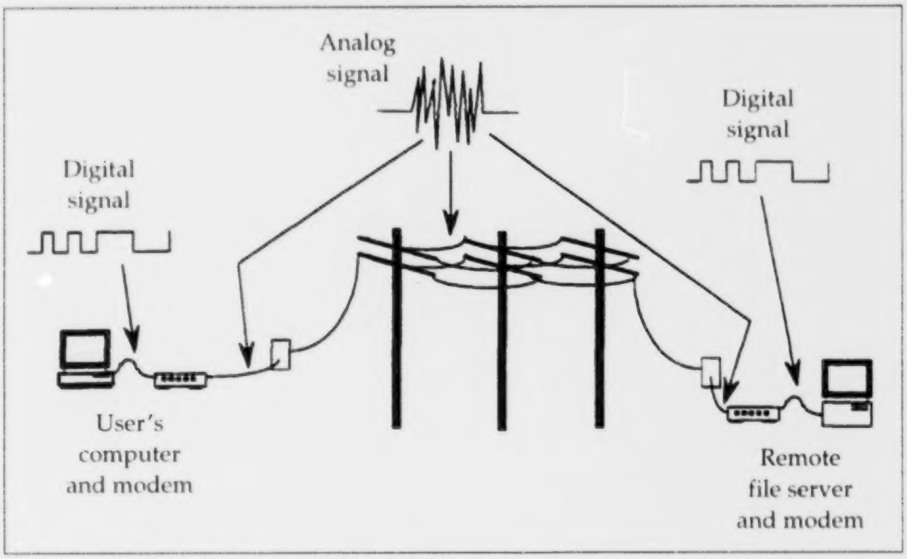
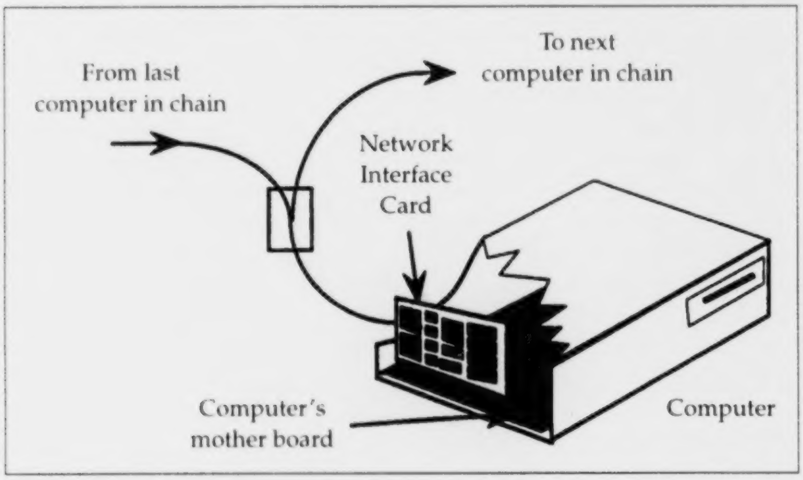

Analog signal
Digital signal
Digital signal
User's computer and modem
Remote file server and modem

Figure 5
Using a Network Interface Card To Connect to a Network


To next computer in chain
From last computer in chain
Network Interface Card
Computer's mother board
Computer

Sending and Receiving Information Electronically: How It Is Done

In order to exchange data, a network exchanges information in the form of packets. A packet includes the address of both the sender and the receiver and a portion of the information being exchanged (see Figure 6). Packets are crucial in that the whole message cannot get through all at once but must be broken down in order to allow multiple users simultaneous access to the network.

For a user to send and/or receive information via a network, there must be a coordination of hardware and software. Due to the many different types of equipment available, several protocols have been established. A protocol is basically a set of rules established to make sure equipment of different origins can carry out the necessary steps to communicate with each other. When you type a message in an e-mail program, the software and hardware in your computer must know how to go about sending that message, who to send it to, and how to get it there. The entire message cannot be sent at once; that would cause a log jam if several users wanted to send a message at the same time. The software and hardware must divide the message into packets of information, add the receiver's address to each packet, and send them as the network allows (see Figure 7). The receiver's computer must know how to

Figure 6
Data Packet Transmission

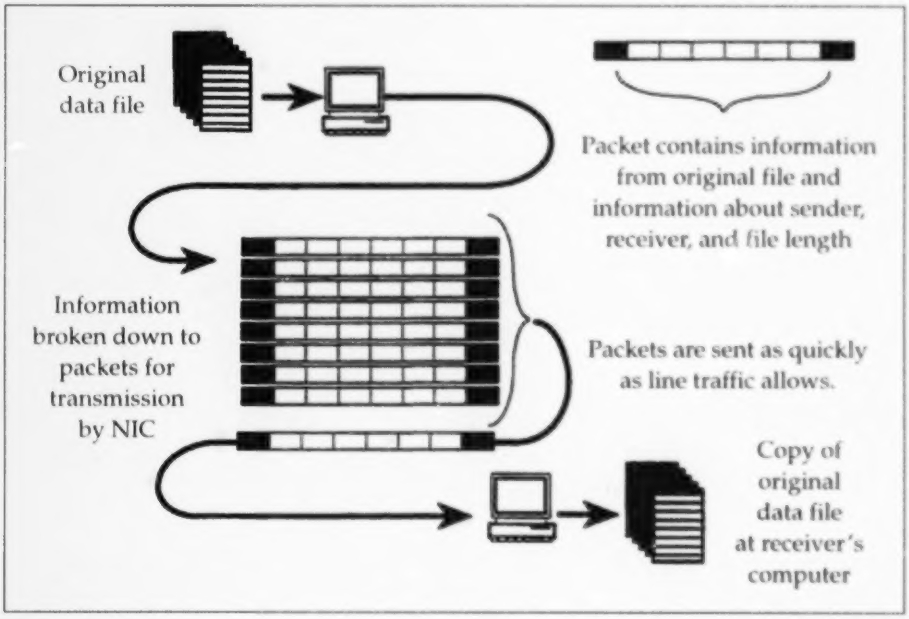
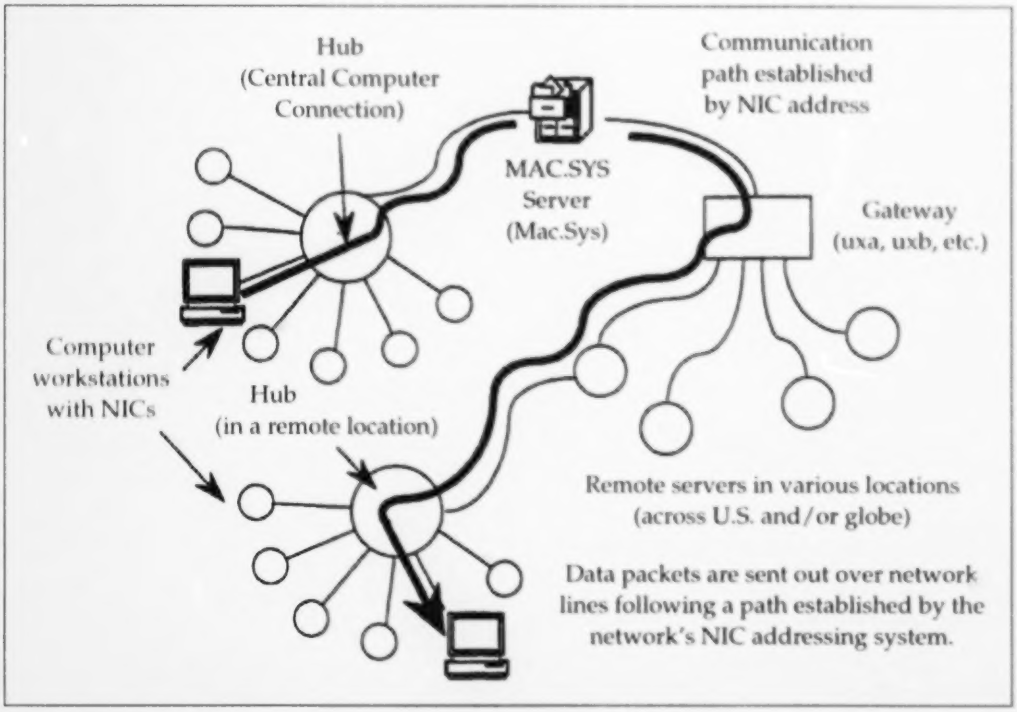

Original data file
Packet contains information from original file and information about sender, receiver, and file length
Information broken down to packets for transmission by NIC
Packets are sent as quickly as line traffic allows.
Copy of original data file at receiver's computer

Figure 7
Data Path


Hub (Central Computer Connection)
Communication path established by NIC address
MAC.SYS Server (Mac.Sys)
Gateway (uxa, uxb, etc.)
Computer workstations with NICs
Hub (in a remote location)
Remote servers in various locations (across U.S. and/or globe)
Data packets are sent out over network lines following a path established by the network's NIC addressing system.

reassemble the message in order for the user to view the message. This process usually takes seconds because computers operate at high speeds.

The Internet: The Fast Lane on the Information Superhighway

Imagine being able to access information from across the globe with the click of a mouse, right from your desk. It is being done by thousands of computer users today through the Internet. The Internet has been called a "network of networks," and rightly so. There are literally thousands of servers located across the globe, all available to connected users. Each month, thousands of new users are initiated to the vast potential offered by the Internet. The Internet gives you access to an endless stream of information, all at your fingertips. You can access libraries across the country to search for titles. You can even retrieve data files or public domain software to your computer from distant servers, all in a matter of seconds and at no cost to you. Using Internet, you can send e-mail messages to people across the globe in a matter of minutes (depending on the location of the receiver).

The Internet can be accessed by using any type of computer, and there are several programs developed to allow users to access the files in a manner similar to how they use their computers or workstations. For DOS computer users (e.g., IBM, Compaq, and Tandy), there is a familiar DOS-like interface. Mac users can browse through the same files using programs that mimic the Mac interface. For this class, you will use two browsers—one called TurboGopher and one called Netscape. You will learn more about these browsers as you complete the unit assignments.

The Internet can be compared to a small computer network (even though it is, in fact, a huge computer network). Users on a LAN can access data and programs stored on a server. These servers are really computers with large hard drives, usually located in a different room or building. After using a LAN, you have become familiar with accessing programs and data stored on servers. The Internet works in much the same way; users access the Internet (compare to logging into Mac.Sys) and, depending on the program interface, either use prompt commands or browse through folders to find documents of interest.

Here at WIU, we can access the Internet via ECOM, ECN's gateway located in Chicago. Once you get a student account, you will be able to access the Internet from any campus computer lab. You will learn how to send e-mail messages, search servers for information, and download files to use as resources.

E-Mail: The Electronic Alternative to Snail Mail

E-Mail (or Email, e-mail) stands for electronic mail, a method of sending and receiving messages or documents over a network. E-mail makes life much easier for those who use it. You can rest assured that your message will get through (with a great amount of certainty) and you can read the messages that you receive at your leisure. E-mail is much more immediate than regular (or snail) mail. And the only real difference is that e-mail cannot send a tangible item, only electronic messages composed on a computer.

Possibly, the only negative aspect of e-mail is that the person receiving the message can "hide behind the electronic wall" by not responding to the message, unlike a personal or phone conversation where feedback is direct. You also have no way to add the dimension of nonverbal communication we all use everyday. Users can compensate by being very specific in their messages, stating facts and opinions in a manner which is direct and to the point. It should be stated here that the benefits of using e-mail far outweigh (not to mention outnumber) the drawbacks.

The method of addressing a message is among the similarities between e-mail and postal mail. In order to send a message, the sender must know the receiver's address which contains all the information needed to route the message properly. The address contains the user's name (which often is their user id), and the name of the domain (group, LAN, or WAN) they are connected to. This information is all the mail program requires to send a mail message, but it must be exact. For instance, a WIU user name for an undergraduate would consist of the letters "mu" (denoting an undergraduate status when the ECN account was created), followed by the user's initials, and a number if more than one student has the same initials. So, if an undergraduate student named Mary Margaret Smith got an account and there were four other students sharing her initials, her account identification would likely be "mumms5."

This account identification would be included in her e-mail address as follows: mumms5@uxa.ecn.wiu.edu. The domain follows the "@" symbol and has some familiar abbreviations. The "edu" means that this person's account is located at an educational institution, specifically "wiu" (Western Illinois University). At WIU, the "ecn" (which stands for Educational Computing Network, the WAN that WIU belongs to) contains several machines, one of which is called "uxa." This person's e-mail account (mumms5) is located on the "uxa" machine, on the "ecn" network at "wiu." Compare this to your postal address which contains your name, street address, city, state, and zip code.

There are many types of e-mail programs currently available. For this class, we will use Eudora. Eudora is a top-quality, free program originally developed at the University of Illinois. Eudora can send messages over the Internet, keep copies of your messages, attach data files to your messages, and perform many other time-saving tasks. Your first assignment will include using Eudora to send and receive assignments. We suggest that you use Eudora daily to check on class-related information. Your instructor may use Eudora to contact you regarding an assignment, grade, test, or other topic. Checking your e-mail on a regular basis will help you develop a respect for the advantages of using electronic mail.

List Servers

A list server (LISTSERV) is an automated system for maintaining discussion lists. By subscribing to a list server, users can receive information on special topics. Special interest groups usually set up their own list servers to disseminate information related to their topic of interest. Subscribers automatically receive the information posted to the list server and, depending on the type of list server, can post their own information. A list server acts as an automated mailing service, sending out the posted message to all subscribers whose names and e-mail addresses are included on the subscription list.

You will subscribe to a list server for this class. Your instructors (and you) will use the list server to send information out to the entire class group.

Assignments

Grading Criteria

The grading criteria for these assignments are based on the degree to which your assignment meets all the criteria specified in the assignment packet. If your assignment meets all the criteria specified, you will receive full credit, or a grade of 100%. The following scale will be applied for assignments which do not receive full credit. Each assignment should be submitted as an individual assignment; please do not staple several assignments together when you submit them.

Criteria for Assignments

100%	Meets all of the specified criteria
90%	Meets almost all of the specified criteria, one item missing or incorrect
80%	Meets almost all of the specified criteria, two items missing or incorrect
70%	Meets most of the specified criteria
60%	Meets a little more than half of the specified criteria
50%	Meets about half of the specified criteria
40%	Meets less than half of the specified criteria
30%	You weren't paying attention at all.

As stated before, pay particular attention to the assignment instructions in order to avoid problems meeting assignment criteria. Some of these assignments will be turned in electronically and on paper; be certain that you follow the instructions regarding how the assignment should be turned in.

Assignment #1: Learning To Use E-Mail

For this lesson, you will receive an account from Academic Computing at WIU so you can use electronic mail (e-mail), and then use Eudora to send a message, all via telecommunications.

Use the procedures discussed in class to obtain an account so that you can send and receive messages using e-mail. When you receive an account from Academic Computing, they will give you a sheet of information about your account. This information will include your account identification (such as muXXX) and your password. Under NO circumstances are you to give ANYONE (including lab personnel) your password! It is a good idea to keep the account information someplace where it will be safe in the event you forget your password.

Using Eudora To Send an E-Mail Message

Eudora is a Mac-based telecommunications program that is much easier to use than DOS-based or UNIX-based programs. Your telecommunications disk contains all the software you need to run Eudora from any Mac located in the Horrabin Hall Computer Lab.

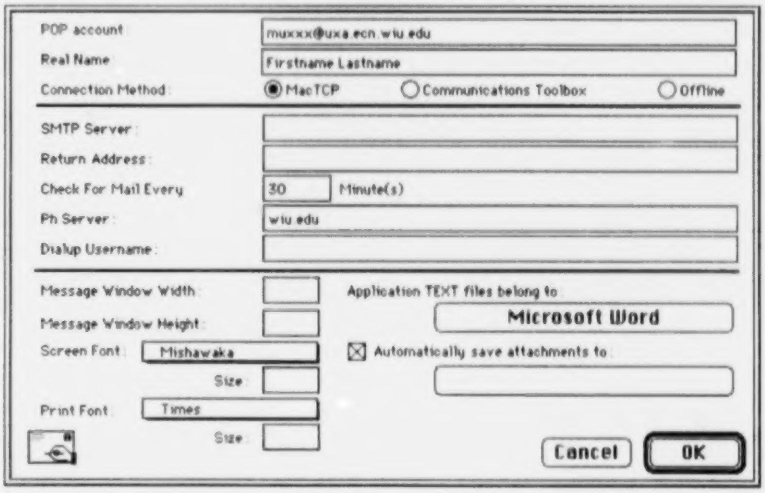
Configuring Eudora

To prepare Eudora for use, you must give the program some basic information such as your account number and your name. To do this, insert your telecommunications diskette into the computer, open the Eudora folder, then double-click on the icon entitled "Eudora Settings" to open Eudora. Once the Eudora program is open, select "Configuration" from the Special menu. The Configuration file below will appear (see Figure 8). Place the following information in the appropriate box:

POP account:	Your FULL e-mail address (muxxx@uxa.ecn.wiu.edu)
Real Name:	Your first and last name
Connection Method:	MacTCP
Ph Server	wiu.edu

All other settings can be blank, or remain as they are.

Figure 8
Configuration File



POP account: muxxx@uxa.ecn.wiu.edu
Real Name: Firstname Lastname
Connection Method: ● MacTCP ○ Communications Toolbox ○ Offline
SMTP Server:
Return Address:
Check For Mail Every 30 Minute(s)
Ph Server: wiu.edu
Dialup Username:
Message Window Width:
Message Window Height:
Screen Font: Mishawaka
Size:
Print Font: Times
Size:
Application TEXT files belong to: Microsoft Word
☒ Automatically save attachments to:

The next part of this lesson will consist of a tutorial and a message to be sent to your instructor. The tutorial is located in the *Eudora 1.4* manual located in the Horrabin Hall Computer Lab. Read pages 7-17 (stop at "Transferring a

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Message"). Follow the instructions included with the tutorial. After completing it, send an e-mail message to your instructor using the information you learned in the tutorial. The e-mail message should be brief and can consist of any message you wish to send; the purpose is to get your e-mail address to your instructor.

The last part of this assignment will involve signing up for a listserv. The concept of a listserv and specific instructions on how to sign up for one will be discussed in class.

Assignment #2: Using Advanced E-Mail Techniques

Objectives

After completing this assignment you will be able to

- attach documents to Eudora e-mail messages.
- create mailboxes and mail folders.
- transfer a message to a different mailbox.
- add a signature to your message.
- save an outgoing message for later changes.
- reply to, forward, or redirect a message.

Readings for This Lesson

All the following readings are from the *Eudora 1.4* manual located in the Horrabin Hall Computer Lab. The *Eudora 1.4* manual page numbers are incorrect; please use the following page numbers:

"Attaching Documents," pp. 54-58
"Mailboxes," pp. 38-42
"Transferring Messages to a Different Mailbox," pp. 44-46
"Creating a Signature," p. 97
"Saving an Outgoing Message for Later Changes," pp. 26-27
"Replying, Forwarding or Redirecting Messages," pp. 59-63

After reading all of the above, you are to do the following:

1. Place a signature on your outgoing messages; you can use a catchy phrase that you like (providing it will not be offensive to anyone) or put information there. Be careful what information you include! It might not be a good idea to put your home (or campus) address or phone number, unless you know that you will only be using e-mail with friends.

2. Create a new mailbox on your disk with your name and ITT 223 in the mailbox title.

3. Transfer the last message you received from the listserv to the ITT 223 mailbox.

4. Create a word-processed document using Microsoft Works, detailing the steps you used to create your signature, attach it to a message, and send it to your instructor. Be sure and put your name in the body of the message.

Assignment #3: Browsing the Internet with TurboGopher

Objectives

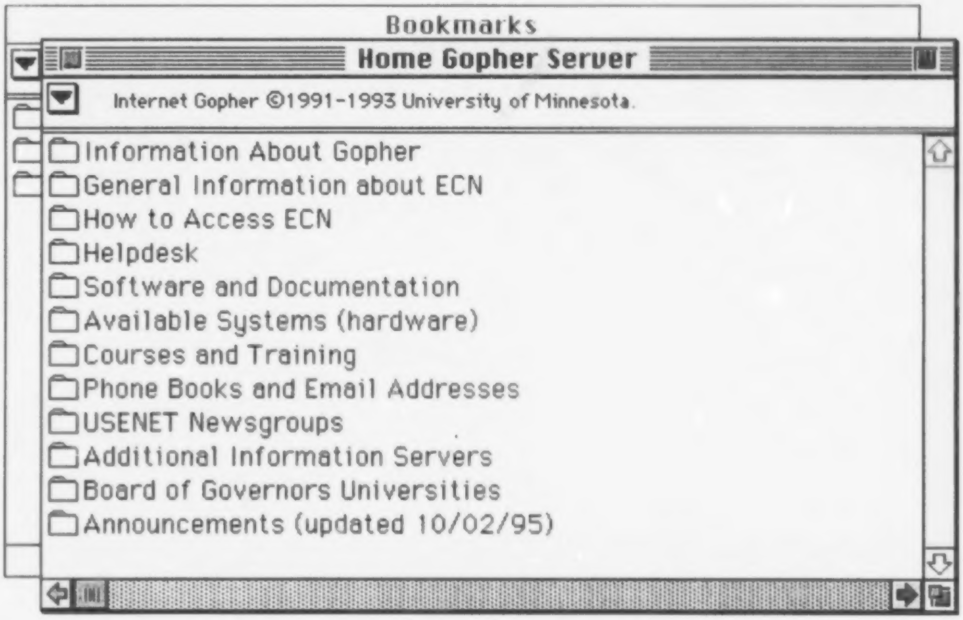
After completing this assignment, you will be able to

- browse through the various servers found on the Internet using TurboGopher.
- create and use individual Bookmark files.
- retrieve data files and Public Domain software from Internet servers using TurboGopher.

TurboGopher is a program that allows users to access the Internet via a familiar Mac-type interface. You will notice that files are located inside folders; these folders represent the various servers located across the globe. By using TurboGopher, you will be able to browse through files located in these server/folders easily and retrieve files that you want for your own use.

Part 1: Saving a Text File to Your Disk

For Part 1 of this assignment, you are to access the TurboGopher program located on your Telecommunications disk. Start TurboGopher by double-clicking on the icon. After TurboGopher starts, you will see the following windows:



Bookmarks

Home Gopher Server

Internet Gopher ©1991-1993 University of Minnesota.

- Information About Gopher
- General Information about ECN
- How to Access ECN
- Helpdesk
- Software and Documentation
- Available Systems (hardware)
- Courses and Training
- Phone Books and Email Addresses
- USENET Newsgroups
- Additional Information Servers
- Board of Governors Universities
- Announcements (updated 10/02/95)

The window in the foreground is the Home Gopher Server window. From this window, you can access the Internet servers located all over the globe. All the servers are located in the folders shown in this window. The two most popular folders are the USENET Newsgroups and Additional Information Servers. Inside these two folders are server/folders listed in alphabetical order and layered inside folders (much like the folders located in Mac.Sys or the Mac's hard drive), you simply double-click on each folder until you see information files of interest to you.

You should be aware that there will be times when the system is too busy for you to use TurboGopher. If, and when, this happens, try again later. The ideal time of day to access TurboGopher is early in the morning or later in the evening.

To complete this part of the assignment, access TurboGopher and perform the following steps:

1. From the Home Gopher Server window, open the Additional Information Servers folder.

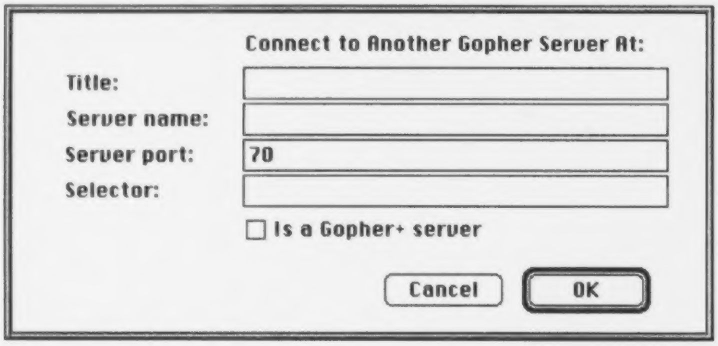
2. Open the Directories folder.

3. Open the Other Gopher Servers folder.

Now you are free to explore. Try going to different servers around the country and the globe. Don't be afraid. If the server is too busy, it will simply tell you. This is an opportunity for you to see what is out there. Don't worry if things seem confusing right now; you will become familiar with the system over time. Remember that the Internet is open to all who are connected; don't be intimidated by the sheer number of servers available. Try as many as you can.

If you cannot find anything out there that looks very interesting, below are several gopher servers which may be of interest to educators (see General Interest Sites in Education To Visit). To access these gopher servers, follow these steps while running TurboGopher:

1. From the File menu, choose Another Gopher.
   You should see the following dialog box with the cursor blinking in the Server name box.



Connect to Another Gopher Server At:

Title:

Server name:

Server port: 70

Selector:

☐ Is a Gopher+ server

2. Type in the Server name box the name of the gopher address (e.g., copernicus.bbn.com)

3. Press the OK button.
   Depending on the level of activity on the Internet, it will take from a few seconds to several minutes for the window of the gopher server you requested to appear (unless it is busy). Double click on the folders which look interesting and have fun exploring.

General Interest Sites in Education To Visit

- ericir.syr.edu
- gopher.ed.gov
- copernicus.bbn.com
- gopher.cic.net
- cosn.org or digital.cosn.org

Lesson Plans for Math and Computer Science, Science, Social Studies, and Language Arts

- bvsd.k12.co.us
- ericir.syr.edu

When you find a document that interests you (for whatever reason), open it by double-clicking on its icon. For Part 1 of this assignment, you should save a text document to your disk. To do this, follow these instructions:

1. From the File menu, choose Save as Text.
   A file dialog box will appear.

2. Select your disk by clicking on the Desktop button and then double clicking on the name of your disk.

3. Click the "Save" button to save the file to your disk.

Part 2: Saving a Bookmark

After you have explored for a while, you should find some server folders that have files on topics that are of interest to you. One of the problems is finding these servers again once you quit TurboGopher. This is where the Bookmark window is helpful. It contains bookmarks or folders that you selected during earlier sessions. You should have noticed that some interesting files can be found after going through many layers of folders. Bookmarks can make it much easier to get where you want to be.

There are two ways in which to set a bookmark in TurboGopher. The first (and easiest) way to set a bookmark is to click on the folder you want to save as a bookmark. From the Gopher menu, choose Set Bookmark. That folder will then show up on your bookmark file from now on. To access the folder of interest (you should be familiar with selecting windows by now), all you have to do is click the mouse on the top window bar to access the bookmark window, then double-click the desired folder to get to the files you want. Another way to access the Bookmark window is to choose Show Bookmarks from the Gopher menu. The problem with setting a bookmark using this method is that the bookmark is not saved on your disk; it is saved on the computer hard drive. Thus, in order to use that bookmark again, you must make sure you use the same computer.

The second method involves saving a bookmark file to your disk, so you can always retrieve that bookmark from your disk, irrespective of what computer you are using. To do this, follow these instructions:

1. Click on the folder you wish to set up as a bookmark.

2. From the File menu, choose Save as Bookmark File.
   A Save dialog box appears.

3. Type in the name of the bookmark you wish to save (e.g., Lesson Plans).

4. Click on the Desktop button.

5. In the list available, double-click on the name of your disk.

6. Click on the Save button.
   This saves a bookmark file under the name you gave on your disk.

To retrieve this bookmark, follow these instructions:

1. From the File menu, choose Open Another Bookmark File.
   An Open dialog box appears.

2. From the list of bookmark files available, double-click on the bookmark file you would like to retrieve.
   The window of the Gopher server you selected should come up shortly.

To complete this part of the assignment, you should spend some time browsing through the various folders located in TurboGopher. You should save at least two bookmarks, using either the first method or second.

Part 3: Downloading a Program

For this part of the assignment you will retrieve a public domain (free) program from a specific Internet server. Launch TurboGopher and proceed through the server/folders as follows: Additional Information Servers/ Directories/Other Gopher Servers/North America/USA/Michigan/University of Michigan GOpherBLUE Service/ Software Archives/Macintosh Archive.

It would be a good idea to set the University of Michigan GOpherBLUE Service server/folder as a bookmark.

After you open the Macintosh Archive folder, you will see several folders listed. For this part of the lesson, you will download a software program from the gopher server to either your disk or the hard disk of the computer you are using. For those of you who would like to download a program in order to complete the lesson quickly and are not really that interested in seeing the types of programs available, I have provided the following step-by-step instructions to help you complete the lesson. In these instructions, you will download a specific card game. For those of you who are interested in downloading different kinds of free software programs, I have provided information in the Downloading Other Programs section.

Step-by-Step Instructions

1. From the Macintosh Archive window, open the game folder.

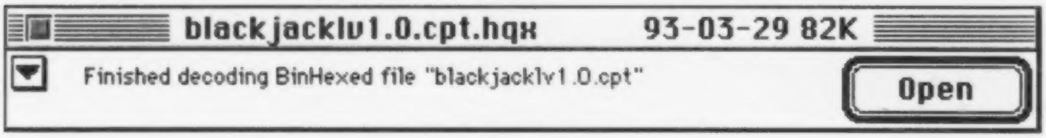
2. Open the card folder.
   You will see several files listed.

3. Double click on the file "blackjacklv1.0.cpt.hqx."
   A Save dialog box appears.

4. Click on the Desktop button and double-click on the name of the hard drive of the computer (usually named "Macintosh HD").

5. Click on the Save button.

6. Click on the Open button.
   After the file is saved on the hard disk, an open dialog box appears which looks like the following:



blackjacklv1.0.cpt.hqx 93-03-29 82K

Finished decoding BinHexed file "blackjacklv1.0.cpt"

   The file is decompressed by the program on your disk called "CptExpand."

7. Click the Delete button.
   After the file is decompressed, a dialog box appears asking you if you would like to delete the original archive. You really don't need this file any longer, which is why you should press the Delete button.

8. Double-click on the Macintosh HD icon (the hard disk where you saved the file).
   Find the folder named "blackjacklv1.0 ƒ."

9. Open the folder blackjacklv1.0 ƒ.

10. Double-click on the program "BlackJackLV 1.0".

BlackJackLV 1.0

11. Have fun playing the game.

12. Find out the name of the author of the game. From the Apple menu, choose About Blackjack. Click the mouse. Write down the name of the author of the program because you will need to send me the name of the author as described at the end of this document.

13. After you have finished playing the game, choose Quit from the File menu.

14. Delete this game off of the hard disk by dragging the icon of the game into the trash can. Choose Empty Trash from the Special menu. Click OK.

Downloading Other Programs

If you choose to download other programs in addition to or in place of the Blackjack program described in the previous section, there are thousands of programs to choose from. You might try the Hypercard folder or the games folder. Inside these folders will be additional folders describing the type of files located inside them. Most of the files will be programs developed by students and/or instructors to be used for free (freeware, public domain) or at greatly reduced cost (shareware). These files will be compressed so that many can fit on the server. There are two decompression utilities located on your telecommunications disk; one of these should be able to decompress the program you retrieve.

If the file you wish to download has the extension .cpt.hqx (like the Blackjack file described in the previous section), you can follow the same procedures as outlined in the step-by-step instructions. Some programs require a little different procedure which will be explained in the lab session since it is too complex to explain in this document.

What To Submit To Receive Full Credit for This Lesson

In order to get full credit for this entire assignment, you should send an e-mail message to your instructor with the following information:

- The name(s) of the text files you saved to your disk completed in Part 1.
- The names of the bookmarks you set (should have two bookmarks).
- If you choose to follow the step-by-step instructions for downloading the Blackjack game, give me the name of the author of the game. If you downloaded another program other than the Blackjack game, write down the name of the program you downloaded to the hard drive.

Assignment #4: Browsing the World Wide Web

1. Open the program called "Netscape."
   Using the procedures discussed in class, login to Mac.Sys, open the MacPrograms folder, open the Communications folder, open the Internet folder, open the WWW (Netscape, Mosaic) folder, open the Netscape 1.1N folder, and then double-click on the Netscape 1.1N icon.

   Wait for the WIU HomePage to appear. After a few seconds, depending on how busy the Web is, you should see a title which reads "Welcome to Western Illinois University," with a picture of Sherman Hall just beneath the title.

2. Browse many of our local resources at WIU on the Web.
Now browse through the WIU Web to find each of the following local resources:

- Picture of Sherman Hall
- Syllabus for Music 394, John Murphy's "Music in World Cultures"
- How students get computer accounts at WIU
- The hours of operation for the Main Library Building
- Picture of Donald Spencer
- Cost of tuition and fees for 10 semester hours of undergraduate work (Hint: Select the Catalogs homepage, select the 1995-1996 current catalog, and with a little bit of surfing, you should find it rather quickly)
- Staff of Academic Computing's Hardware Repair Center (Hint: Look under the Provost/Academic Affairs homepage)
- Picture of Morgan Hall

There are two parts to this assignment. The first part consists of finding the answers above. After finding the answers, send them to your instructor (via e-mail).

3. Browse through the Web to find many of the locations that are listed below available throughout the nation. Now find each of the following homepages by entering the given location. Do this by typing in the location in the "Netsite:" entry field which runs across your monitor near the top of the screen. If you highlight the text first in the Netsite field, then begin typing the new location, the old site will automatically be deleted and replaced with the location you type in. Finally, press the Return key to retrieve the new location.

Education Related Sites

- http://ericir.syr.edu
- http://www.yahoo.com/Education
- http://www.yahoo.com/Education/K_12/School_Districts/
- http://www.educ.kent.edu/ed/teachers/teachers.html
- http://k12.cnidr.org:90/
- http://163.150.7.51/EdResources.html
- http://hillside.coled.umn.edu/others.html
- http://hillside.coled.umn.edu/
- http://129.252.237.161/edresources.html

General Interest Sites

- http://white.nosc.mil/info.html
- http://www.gsfc.nasa.gov/NASA_homepage.html
- http://www.grci.com/
- http://www.ora.com/
- http://newproducts.jpl.nasa.gov/s19/s19.html
- http://www.whitehouse.gov/
- http://akebono.standford.edu/yahoo
- http://ednow.com
- http://www.apple.com/
- http://www.flightpath.com/clients/jazzonln/
- http://www.commerce.digital.com/palo-alto/Future Fantasy/home.html
- http://home.mcom.com/home/whatscool/whats_cool12/94html
- http://www.geo.mtu/~jsuchosk/fish/fishpage
- http://www.bu.edu/GAMES/tictactoe
- http://north.pole.org/
- http://www.ims.columbia.K12.mo.us/

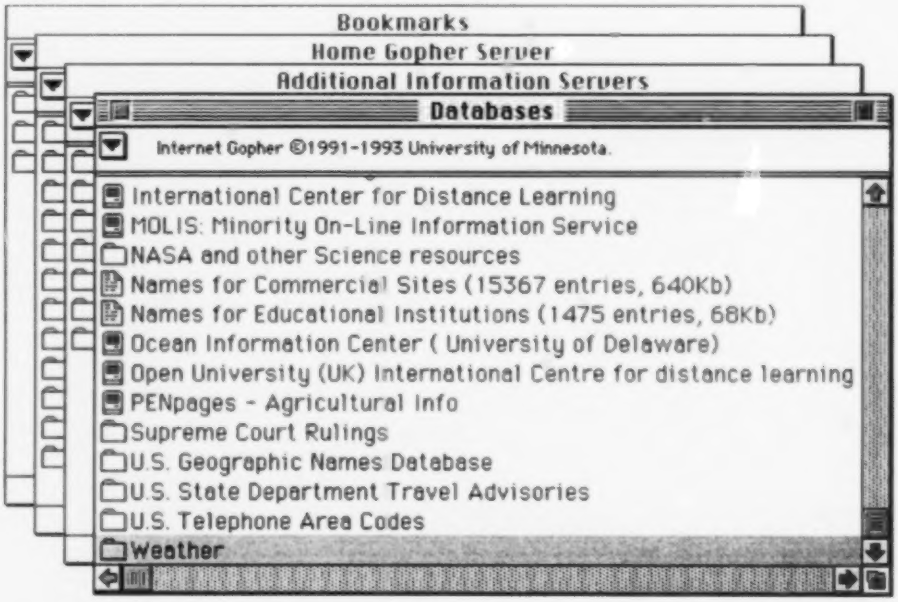
For the second part of this assignment, you need to print the homepage for one of the sites you visited. To print a homepage, choose Print from the File menu. Be sure to select a homepage which is not more than two pages long. After your homepage has been printed, write your name, section #, date, and Telecom #4 on the front page.

Note: You should not expect that all connections will be successful.

Netscape Hints

Click on the "Back" button to go to the most previously viewed Web page.
Click on the "Home" button to go to the initial home page.
Click on the "Go" button from the menu line to select a recently viewed page.
Click on the "Stop" button to terminate the attempt to load a page.

Assignment #5: Research on the Internet



Bookmarks

Home Gopher Server

Additional Information Servers

Databases

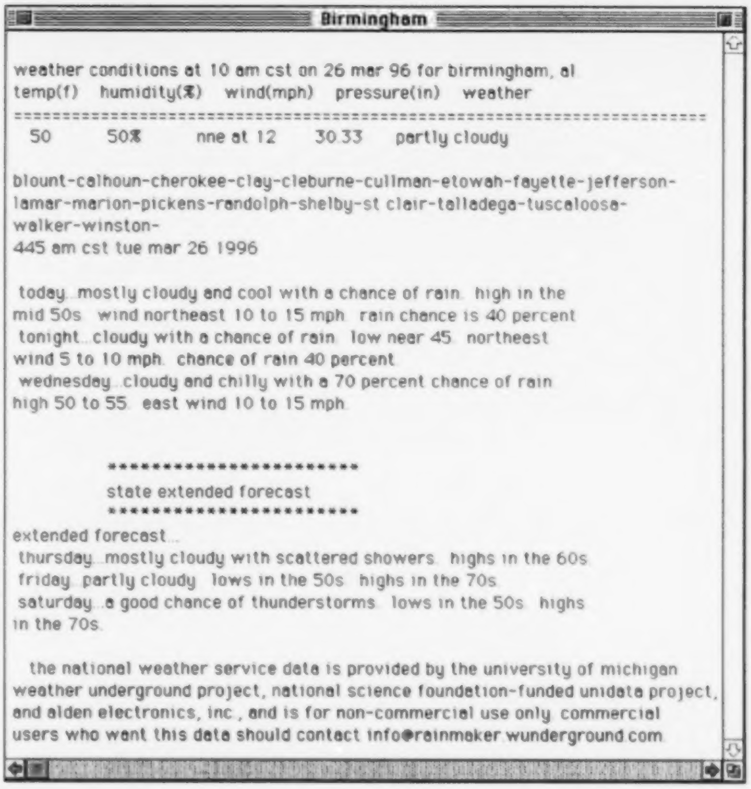
Internet Gopher ©1991-1993 University of Minnesota.

- International Center for Distance Learning
- MOLIS: Minority On-Line Information Service
- NASA and other Science resources
- Names for Commercial Sites (15367 entries, 640Kb)
- Names for Educational Institutions (1475 entries, 68Kb)
- Ocean Information Center (University of Delaware)
- Open University (UK) International Centre for distance learning
- PENpages - Agricultural Info
- Supreme Court Rulings
- U.S. Geographic Names Database
- U.S. State Department Travel Advisories
- U.S. Telephone Area Codes
- Weather

You will be gathering data via the Internet for this assignment. The data will be compiled and manipulated using Microsoft Works. You will be assigned to a group and will be directed as to what data you will collect. Your group will be given a time to meet to review the data you have collected and compile it into a presentation. The purpose of this assignment is to expose you to a method of involving students in a network-based activity.

Part I

Each student will be assigned to a group. You will receive information regarding your group via the class listserv. Each group will be given a geographical region of the United States and will collect data on the weather patterns of selected cities within that region. Each group will choose a leader and report that decision to your instructor via e-mail.



```
weather conditions at 10 am cst on 26 mar 96 for birmingham, al
temp(f)   humidity(%)   wind(mph)   pressure(in)   weather
=====================================================================
  50        50%        nne at 12      30.33     partly cloudy

blount-calhoun-cherokee-clay-cleburne-cullman-etowah-fayette-jefferson-
lamar-marion-pickens-randolph-shelby-st clair-talladega-tuscaloosa-
walker-winston-
445 am cst tue mar 26 1996

 today...mostly cloudy and cool with a chance of rain. high in the
mid 50s. wind northeast 10 to 15 mph. rain chance is 40 percent
 tonight...cloudy with a chance of rain. low near 45. northeast
wind 5 to 10 mph. chance of rain 40 percent
 wednesday...cloudy and chilly with a 70 percent chance of rain
high 50 to 55. east wind 10 to 15 mph


          ***********************
          state extended forecast
          ***********************
extended forecast...
 thursday...mostly cloudy with scattered showers. highs in the 60s
 friday...partly cloudy. lows in the 50s. highs in the 70s
 saturday...a good chance of thunderstorms. lows in the 50s. highs
in the 70s

  the national weather service data is provided by the university of michigan
weather underground project, national science foundation-funded unidata project,
and alden electronics, inc., and is for non-commercial use only. commercial
users who want this data should contact info@rainmaker.wunderground.com
```

You will access the Internet weather database in TurboGopher (found under Additional Information Servers/Databases/Weather/National Weather.) It would be a good idea to add the state's folder to your bookmark file. You will be given a list of cities to check every day for a five-day period. You will keep a log of the following information for each location: daily temperature, humidity, wind (in miles per hour and direction), barometric pressure, forecasted high and low temperature, and weather. Note that the conditions at the top of the window change every hour. Your group may wish to set a time to check the weather each day. Also note that you must use the scroll bars or adjust the window size to see the entire window. You will send your group leader the information daily via e-mail. This information will be kept by the group leader in a log created using a Microsoft Works spreadsheet or database. The group leader will not be responsible for collecting data.

Part 2

The criteria will be the same for this assignment as for previous assignments. Included in the grading criteria will be how much information was given in the presentation, how well your group compiled the data, and how the presentation was developed using the data. As stated previously, each individual will be graded for his or her performance.

Hints for Presentation

Keep in mind that your group will be presenting data collected by the entire group. How can you keep the data separate while collecting it and then combine it for the presentation? Should you use a spreadsheet or a database? What type of graphical information can these programs create? Do you want to just show the data, or do you want to present graphs and charts (probably the latter)? How will you go about comparing the given data? Are there compare/contrast possibilities? It is important to remember that you will be showing a large group your information. You should ask yourself what is the easiest way to do this. What information will you need to include in your spreadsheet (or database) to keep the data understandable? As the group leader, you should include information in your spreadsheet (or database) so you can keep track of the other members of your group. As data collectors, you should keep track of all data collected in case problems arise.

College of Education and Human Services
Western Illinois University
Macomb, Illinois

1996

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The Governors Ameritech EdTech Grant

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Distance Education in the K-12 Classroom

Dr. Molly Herman Baker & Dr. Bruce Barker

Ameritech
WIU Western Illinois University

Tools for Teaching with Technology

The WIU Approach to Integrating Technology into Teacher Education

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Distance Education in the K-12 Classroom

Dr. Molly Herman Baker and Dr. Bruce Barker
Department of Instructional Technology and Telecommunications

Module Context

Course Description

ITT 223 - Educational Microcomputing and Technology. Enables students to gain expertise in using computers and computer-related technologies in the public schools. Emphasizes computer applications, evaluation and selection of educational software programs, and educational telecommunications.

Course Prerequisites

None

Additional Courses Where Module Could Potentially Fit

ITT 200 - Introduction to Educational Technology
ITT 210 - Technology in Education and Training

Other Relevant Student Characteristics

Preservice teachers

Module Focus

Title of the Module

Distance Education in the K-12 Classroom

Content Area of the Module

Awareness of distance education, its growing presence in public school education, and how public school teachers are getting involved

Description of the Module

This module is one of four core modules addressed in the Educational Microcomputing and Technology course. Its focus is on introducing students to a range of distance education delivery systems available throughout the country, what is happening with distance education in the public schools of Illinois, and what is known about effective teaching on interactive television systems.

Ameritech Student Outcome(s) Supported

- To evaluate and use communications technologies along with computers and multimedia to support the instructional process.
- To identify or design creative uses of telecommunications which develop student skills in problem solving, decision making, data collection, self-paced instruction, research, and communications.

Specific Module Objectives

- To demonstrate an understanding of the concept of distance education, including knowledge of the various types of delivery systems used for distance education and the strengths and weaknesses of the most common ones.
- To identify effective presentation and interaction skills applied by teachers who use television as the major medium for distance education.
- To describe major distance education initiatives in Illinois and in the College of Education and Human Services at WIU.

Technology Competencies Developed Through the Module

Awareness

This module attempts to help preservice teachers become aware of how distance education is impacting Illinois schools, and what is known about effective teaching on such systems. Although students observe distance classes, there are no hands-on distance teaching opportunities due to the number of preservice majors and the limited number of facilities.

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Module Contents

Teaching Strategies

A lecture is conducted during one class day and a discussion surrounding the topic of distance education is facilitated. Discussion topics center around issues emphasized in the readings or experienced by students who have completed the videotape reviews and direct classroom observation.

Learning Strategies

Much of the effort expended on this core module is out-of-class work. Two videotapes about distance education nationally, and effective teaching on interactive television specifically are reviewed in the library. Students also read the attached chapter in the course handbook and visit a distance education class that is being conducted from a distance education classroom. Finally, a short reaction paper is written about their observations.

Ways Students Will Demonstrate Competency

Students turn in a Class Observation Verification Form and write a reaction paper on the observation. Direct experience doing microteaching on the interactive television system is not possible given its heavy scheduling and the number of teacher education students who would need to use the system for this experience. They are also tested on the videos and reading material.

Ways Students Will Learn How To Use Technology in Their Classrooms

This module is focused on awareness, not hands-on experience. The distance teaching videotape addresses application of the technology, but limited skill development is possible. Class discussion centers on how the preservice teachers may be involved in originating or receiving courses/educational opportunities in their K-12 classrooms.

Module Implementation

Print Materials Needed

Distance Education chapter of course handbook (see Supplementary Materials section)

Equipment/Technology Needed

Interactive television system to observe and two videotapes developed for teaching on ITV

Software or Other Electronic Media Needed

VCRs/monitors for videotape review

Implementation Recommendations

WIU offers hundreds of hours of satellite education to Illinois high schools, and offers dozens of interactive television courses throughout the western Illinois region to higher education students. It is important for preservice teachers to see this and discuss how it might impact them as practicing teachers in the future. A large portion of our graduates teach in rural districts where distance education plays an increasing role in bringing courses to districts who have a small number of students interested in a course (hence, the district cannot afford to hire a teacher) or who do not have access to a qualified teacher. Even urban districts are using such systems to share resources and offer courses across district lines. WIU's large preservice student body (approximately 1,600 majors) prevents us from offering "on air" time to everyone, but this module is designed to expose them to what it is like, and introduce them to the skills and issues involved for their future reference.

Supplementary Materials

Distance Education

Distance learning is a broad concept that refers to what a learner experiences when he or she receives information from a distant source. This source may be a teacher who is not in the same room with the learner, a faraway computer that the learner is electronically connected to with his or her own machine, or a publisher who provides a package of learning materials for self-regulated learning.

This chapter will be narrowing the scope of distance learning to that of distance education. What's the difference between distance learning and distance education? Distance learning does not necessarily require the presence of a teacher. For example, navigating the Internet to acquire information that you need for a report may involve learning at a distance, but does not depend on the presence of a teacher. Distance education, on the other hand, is a type of distance learning; it is an educational environment in which learners are separated from a teacher by location. Educational transactions occur between the learner and the teacher. This communication may be handwritten (and exchanged by mail), spoken (and exchanged by telephone, voice mail, or live interactive television), or typed (and exchanged by computer via e-mail). Sometimes this communication is live and immediate, that is, when the learner is discussing course content over the phone or interactive television. Sometimes the communication is delayed, for example, when the learner submits a question or comment via mail or computer and waits for the teacher to respond. Recognizing that there are many ways to learn at a distance, the focus of this chapter will be on live, interactive television, a type of distance education which is common in K-12 education.

In schools throughout the United States, many distance education opportunities are being implemented through a combination of local, state, and federal funding. Students in these school districts have access to educational content that would have been unavailable to them without the support of a distance education delivery system. Whether it be full courses, or shorter educational links between students or classes at distant locations, interactive television is making learning at a distance a common experience for rural and urban students alike.

This chapter is important because it is very likely that the district you teach in someday will be involved in one form of distance education or another. The purpose of this chapter is to introduce you to (1) the variety of distance education technologies being used today, (2) their strengths and weaknesses, (3) the instructional skills that are involved in distance teaching, and (4) the distance education initiatives that are being implemented in the College of Education and Human Services at Western Illinois University and in the state of Illinois.

This unit includes the viewing of videotapes, an "on-site" opportunity to see what is happening at WIU with distance education, and an introduction to the issues involved with distance teaching at the K-12 level.

Objectives

At the completion of this unit, you will be able to

1. Demonstrate an understanding of the concept of distance education, including knowledge of the various types of delivery systems used for distance education and the strengths and weaknesses of the most common ones.

2. Identify effective presentation and interaction skills applied by teachers who use television as the major medium for distance education.

3. Describe major distance education initiatives in Illinois and in the College of Education and Human Services at WIU.

Resources To Be Used

Videotapes

The following videotapes are both available from the WIU Library, Audiovisual Services area, level 1:

- *Linking for Learning: A New Course for Education*
- *Teaching Strategies for Interactive Television*

Background

The past decade has witnessed keen interest in alternative instructional delivery systems for American education. Distance education projects utilizing telecommunications technologies such as satellites, cable television, fiber optics, digital compression, microwave, instructional television fixed services, and so on, are being established at colleges, universities, and business training centers across the country. Similarly, K-12 districts are participating in distance education by receiving courses from educational providers (e.g., universities, consortia of school districts, and companies such as TI-IN) and by cooperating with other districts in sharing teachers and educational opportunities. Few educational practices have caught the attention of education and policy decisionmakers as has the concept of distance education. The most pervasive telecommunications medium used in distance education today is satellite signal, spurred by the 1988 Star Schools grants provided by the U.S. Congress. Fiber optics and compressed video are also receiving increased attention.

The state and federal support given to distance education is a clear indication that this approach to educational delivery is not a passing fad. Distance education is an accepted method for teaching and learning, and its practice is expected to grow significantly in coming years. Many higher education administrators are showing keen interest in distance education as they face the challenges of declining enrollments, an aging student population, and reduced levels of state funding. Business is attracted to it because there is an increasing need for higher skills in its workforce and a desire to provide training in a cost-efficient way to employees at multiple sites.

Many K-12 districts are also keenly interested. By participating in distance education, districts can provide access to courses available from educational providers or share resources with each other. Either option provides course content to their students that could not be offered otherwise because of a shortage of teachers in a particular content area (e.g., Russian), or because of the small number of students wanting or needing a course at their location (e.g., small rural schools), or because of the limited access they have to particular educational resources (e.g., students who live in other countries).

It is important for preservice teachers to understand the potential role these distance education opportunities will play in the lives of their future students and their school districts. Likewise, they need to understand how their roles will be similar or different if they have the opportunity to do any distance teaching. For example, many school districts have formed alliances with neighboring districts through which they can offer courses to the students on a distance education network. A teacher at one of the schools teaches a course to a few students in his or her school and simultaneously teaches to interested students at several other schools. These networks can also be used to support short-term connections between classes from several schools as they work on joint projects.

In addition, if a school wishes to offer a course not available locally or through a regional network, it may purchase access to a course offered through a state or national supplier of K-12 courses. In this case, the teacher's role changes to one of remote-site facilitator or resource person to the local students who are working on class projects. It is the purpose of this section of ITT 223 to prepare you for the type of distance education opportunities which are likely to exist in the K-12 school where you will be teaching and to expose you to effective teaching behaviors which you will need in this environment.

Defining Distance Education

Distance education has its historical foundation in correspondence study. Some writers in the field continue to link distance education to traditional correspondence study whereby the student (1) is physically separated from the teacher, (2) is separated in time from the teacher, and (3) learns independent of direct contact with the teacher or with other students (Keegan, 1986; Moore, 1987). Today, correspondence study may be print-based, as it has been in the past, or it may be supplemented with videotapes or computer software which provide additional learning components to the instructional package. Communication with the instructor occurs via traditional mail or via technologies such as the telephone or electronic mail. Correspondence study is usually pursued by adults, although some high school students are able to take advantage of these courses as well.

New modes of distance learning in which the learner gathers information by accessing electronic databases and content experts via electronic mail are fast becoming effective methods for individuals to locate information on virtually any topic of interest, and communicate with others across the country or around the world at their convenience. Similar to correspondence study, this network-based distance learning mode does not confine the learner to a particular time or location. The learner is free to seek information at a time and location that suits him or her.

Most forms of distance education that are directed at the K-12 student, however, are classroom-focused. Thus, live, simultaneous transmission of a teacher's lessons from a classroom or studio to multiple receive-site classrooms in distant locations is becoming an accepted and common format for distance education. Two-way live communication between the teacher and students, whether audio only or audio/video together, permits the instruction to be interactive. This model implies that instruction is oriented more toward small groups or clusters of students at different sites than to an individual student. Under ideal conditions, students at any one site are not only provided direct contact with their instructor but are also able to communicate directly with students at other remote sites during the instructional process (Barker, Frisbie, & Patrick, 1989).

Technology and Illinois Schools

Many schools and teachers today continue to rely on textbooks, lectures, and chalkboards as the standard approach to instruction. Paradoxically, these 19th century practices continue at a time when today's students are growing up in the electronic age—getting their information from television, computers, video games, and other electronic devices. Rapid technological developments of the past two decades have made possible an array of technological tools that can profoundly change today's classrooms. Interactive video, satellite links, multimedia, and telecommunications have the potential to change the way students learn and the manner in which teachers teach. Unfortunately, the actual application of computer and telecommunications technology in education is far below its potential (Ely, 1991). And, in relation to technology uses in business, industry, and the home, it is lagging far behind (Mecklenburger, 1990).

In a technology policy study for the Illinois State Board of Education (ISBE, 1993), fewer than 10% of Illinois school districts were making use of multiple technologies as part of a planned effort to restructure/change the teaching/learning processes in their schools; less than 25% of Illinois school districts had a technology plan or were beginning to make use of multiple technologies integrated throughout the curriculum; only 55% of Illinois school districts had moved beyond computer labs to introduce some forms of advanced technology directly into classrooms at selected grade levels; and, surprisingly, 16% of the state's school districts made little, if any, use of technology at all as a support for learning.

The Illinois Association of School Boards (IASB) in a 1993 survey of 59% of its members reported that nearly all districts in the state had personal computer capabilities in the central office. About one-half had modems and about one-fourth used them to access online electronic databases, gather news from electronic bulletin boards, or use electronic mail services. In terms of instructional use of technology, videotape recorders (VCRs) were reported in 84% of the districts, but only 26% reported use of CD-ROM drives. Access to cable television was reported in 69% of the districts, but satellite dishes and equipment were reported in only 18%. Satellite equipment was more prevalent in the central and southern regions of the state, while access to cable TV was slightly more prominent in the north and northeast portions.

Illinois Goals for Technology

In late 1990, ISBE began a process which involved hundreds of Illinois citizens in helping identify what would be needed to adequately prepare today's school-aged youth for their roles in the 21st century. The process of strategic planning and public input, known as the "Expanding the Vision" project, was concluded in December 1991 and resulted in eight educational goals for developing a world class educational system in Illinois. Goal #5 states,

> All Illinois public school students will attend schools which use technology as a resource to support student learning and improve operational efficiency. (ISBE, 1992, p. 7)

Accordingly, ISBE recommended the increased use of technology throughout the curriculum in Illinois schools. As further evidence for the need to achieve this goal, ISBE has reported that by the year 2001, 70% of American homes are expected to have one or more computers. And, by the year 2010, virtually every job in this country will require some skill with information-processing technology (ISBE, 1993).

Likewise, the U.S. Department of Labor, in a 1991 report by the Secretary's Commission on Achieving Necessary Skills (SCANS Report) (1991), noted that if American industry was to remain competitive in a global society,

> All American high school students must develop a new set of competencies and foundation skills if they are to enjoy a productive, full, and satisfying life. (p. vi)

One of the five basic competencies stated in the SCANS Report is the ability for today's high school youth to work with a variety of technologies to (1) select the right technology, (2) apply technology to a task, and (3) maintain and troubleshoot technological equipment.

Illinois Educational Technology Initiatives

In April 1994, Illinois Governor Jim Edgar convened the Illinois Educational Technology Summit. Invited were state leaders from K-12 schools, higher education, government, and business. The purpose of the Summit was to begin a collaborative process expected to continue over the next five years that will integrate advanced technologies and provide equitable access to technology across the Illinois education continuum.

The process engages the resources of education, business, industry, libraries, health care, labor, and government with the intent of sustaining a globally competitive workforce and an enlightened productive citizenry.

Among specific tasks outlined in the Summit (Office of the Governor, 1994) are

- to ensure equitable, statewide opportunities to learn using new educational systems, including technology and telecommunications.
- to identify barriers and incentives to the integration of technology into education.

Identified at the Summit as the top technological priorities needed to improve Illinois education (Taylor & Smith, 1994), in rank order, were

1. shared resources between the community, institutions, businesses, and agencies. This means that expensive technology resources for lifelong learners would be shared equitably between many constituencies.
2. interactive video ranging in definition from a "hybrid system for interactive video" to "satellite downlinks in school/community settings" to "compressed video via satellite and fiber optic" to "full-motion interactive video."

3. multimedia defined as "multi-media computer work stations" and "personal videoconferencing systems using computers."

4. telephone access for every classroom, home access to school/information on [electronic] network/libraries, and global access to the Internet.

Another statewide technology initiative directly affecting Illinois education has been $15 million appropriated by the Legislature through the Higher Education Cooperation Act Fiscal Year 1994 Grant Allocations. This initiative has established ten different educational consortia across the state linked by fiber optics and compressed telecommunications technology for two-way distance learning and teleconferencing. Consortia funded for 1994 included community colleges and four year colleges/universities, connected by geographical region, throughout Illinois.

Although K-12 schools were not included in funding for 1994, the Governor has recommended investing an additional $15 million for each of the next four years that will extend connections to K-12 schools, businesses, hospitals, and state agencies across Illinois (Whetstone, 1993). This additional $60 million in funding to support a statewide "information highway" has yet to be appropriated by the Legislature.

Technology's Potential To Impact Schools of the Future

Earlier in this chapter, efforts by the ISBE and the Governor's Office to bring Illinois schools into the 21st century were noted. Statewide initiatives are underway to address the gap between the current condition of technology in most Illinois schools and what technologies and infrastructure needs to be in place if we are to revitalize the state's K-12 education system in order to adequately prepare young people for the "information/communications age."

Recent developments in digital technologies, including CD-ROMs, interactive multimedia, and improvements in telecommunications, have made it increasingly easy to access vast amounts of information via a personal computer and transmit instruction and share electronic/visual messages over geographically forbidding distances. New and advancing technologies are reaching out to diverse audiences, providing increased opportunities for education and communication.

Plans by the Clinton administration to establish the National Information Infrastructure (NII), commonly referred to as the "Information Highway" will forever alter traditional means of information gathering, sharing, and dissemination. The Information Highway, when fully established, will have a marked impact on schools and on learning. As Illinois begins to upgrade its own technology infrastructure in order to link to the national Information Highway, efforts must be taken by state policymakers and educational leaders to prepare current and future educators for the coming changes. What will it be like for students and teachers connected to the Information Highway? Classrooms of the future which make use of technology will be vastly different from those today which rely chiefly on textbooks and lectures as the main sources of information. A forecast taken from Graumann and Salpeter (1994) of what schools which make use of advanced technologies will be like in the future follows:

Distance Learning

Most distance learning efforts of the past ten years have been intended to provide curriculum equity to students in rural schools. The most popular method of technological delivery has been satellite-based instruction, which permits a one-way video, two-way audio live and interactive format (Barker & Hall, in press). Most current distance learning projects involve a physical link between a limited number of sites. Yet, in the future, it is not difficult to imagine that two-way, full-motion course exchanges can occur with the ease of dialing a long-distance telephone number between any two sites connected to the Information Highway.

Video Field Trips

The Information Highway will allow students to "travel" to far-off sites to ask questions and "visit" with astronauts aboard the Space Shuttle, veterinarians at Sea World, or other experts and notable individuals at locations around the world. Video camera connections will permit interaction in a two-way, full-motion mode.

Video Teleconferences

Video teleconferencing capabilities will make it possible for students in different locations to meet "electronically" in Clinton-style or Perot-style "town-meetings." Such exchanges will promote forums for discussion and debate, as well as better understanding.

Interactive Video Shows

CD-ROM and videodisc-based technologies, when linked to personal computers, enable students to work independently or in small groups with preprogrammed interactive instructional software. This type of interactive technology will continue. In addition, however, the Information Highway will deliver cartoons, game shows, and dramatic performances in an interactive format. It is anticipated that educational TV programs will bear a strong resemblance to today's interactive multimedia software.

Teacher Training

In several schools, student teachers are already being observed by their university supervisors from remote site locations using mounted TV cameras in the classroom. Such technology, linked via fiber optics or compressed video from the school to the university, allow university professors to observe student teachers without traveling long distances to the school site. After the lesson, student teachers and their professor can discuss the lesson together via a two-way TV signal. The future will likely see this as a common practice in the preparation and training of teachers.

Video on Demand

Current services provided by cable TV networks to many American homes allow residents to order "Pay-per-View" movies on demand. Similar services are also provided by most large hotel chains to view commercial movies on-demand in the privacy of one's hotel room. This same ability (video on demand) has potential for the school place as well. Rather than sending videotapes via the postal service, or in large districts via courier to school sites, the future will allow teachers to access—at will—extensive video collections from a central location. It is likely that a teacher might "call up" portions of two or three videos, each from a different remote source, during the course of a single lesson.

Online Shopping

Home shopping already exists as one of the most popular features of cable television. This concept has potential for educators as well. Teachers might watch an "educational home shopping" channel to look for a particular math manipulative or a special reading book, or to preview a variety of videos and multimedia software before deciding on whether they want to purchase them or not.

Electronic Mail

The Internet, the giant computer linking millions of computers and users together in higher education, will become increasingly accessible to public schools. E-mail messages to peers in faraway places and with subject matter experts across the country will become a regular means of communication for teachers and for students.

Online Research

Thousands of electronic databases, electronic bulletin boards, and the card catalogs of major libraries are already accessible via Internet to most college and university professors. These same services will become available to public school administrators, teachers, and students. A project is currently underway with the intent of making the entire U.S. Library of Congress accessible for search via Internet.

Home/School Communication

Homework hotlines already exist at many schools. In the future, it is anticipated that this concept will be extended in order for students who are sick at home to "look in" to class and keep up with their school work. It is also anticipated that parents at home or work might even be able to "tune in" and view their child's performance or behavior when they have the time.

Therefore, technology in Illinois schools will be pervasive and have a major impact on how students learn. Of course, this will drastically affect how teachers teach, as well, demanding that progressive teacher education programs prepare their graduates for a technology-rich environment as much as possible. The focus of this chapter is on distance education and distance teaching in K-12 schools as it is currently being practiced, that is, over interactive television. The chapter on Telecommunications attempted to introduce you to some of the skills necessary for online searching and communication as described in some of the emerging teaching/learning activities above. Other chapters introduce you to other technology-based skills necessary for new teachers in the 1990s.

Distance Education at WIU

The College of Education and Human Services at Western Illinois University (WIU) has been an active participant in distance education since 1988 when the WIU/ISBE Satellite Education Network was established and a satellite uplink transmitter was installed on campus. Over the past five years, WIU has delivered hundreds of hours of live, one-way video, two-way audio interactive instruction to more than 100 high schools scattered throughout Illinois and to over 1,000 sites across the nation affiliated with TI-IN Westcott Telecommunications. Instructional programming has included credit and enrichment courses for students, inservice training for classroom teachers, and community education classes.

Since the summer of 1993, WIU's experience in distance education has also included work with two-way interactive compressed video. Three CODEC units link WIU's Electronic Classroom with Black Hawk Community College in Moline, Illinois, and Lincoln School in Springfield, Illinois, each approximately seventy-five miles away from the WIU origination site. In addition, WIU is part of a regional consortium in western Illinois that has received funding to purchase seven more units to connect community colleges in the western part of the state with WIU. This consortium of colleges will use the system for higher education classes and shorter teleconferences, meetings, inservice workshops, and other educational endeavors. K-12 districts will likely be linked to the system within the next year or two.

In this chapter, we have presented a definition of telecommunicated, distance education by noting the distinction between classroom-focused and other types of distance education. We acknowledge that most of the attention currently given distance education follows the classroom-focused model. We have also tried to identify some of the practices and strategies common to successful classroom-focused distance education programs. The thoughts expressed herein are supported by research in the field and are based on our own experience and continued work with satellite-based distance learning over the past six years and our recent work with microwave and compressed video delivery of instruction.

Strengths and Weaknesses of Live Distance Technologies

As you might imagine, the capabilities of the various distance technologies differ. There are advantages and disadvantages associated with each. The following section summarizes these strengths and weaknesses for satellite and noncompressed interactive television (microwave, fiber optics), two of the most common technologies currently being employed in K-12 schools (Barker, 1991).

Advantages and Disadvantages of Satellite TV

Satellite-delivered distance education has been the most widely accepted distance learning medium among schools. Kentucky has established its own statewide network. Large networks have been established in several other states, including Illinois, Missouri, North Carolina, Oklahoma, South Carolina, Texas, and Washington.

Live TV broadcasts are beamed from a host-site classroom or studio via an uplink dish to a satellite transponder about 22,300 miles in space which is orbiting the earth's equator. The signal is then beamed back to downlink dishes at the various receiver site locations. A single satellite's "footprint" can cover one-third of the earth thereby permitting simultaneous transmission across the entire United States and most of Canada and Mexico.

In this configuration, satellite technology permits one-way transmission of voice, data, and full-motion video. Audio talk-back by participants at the receiver site locations is over regular telephone lines. On this basis of one-way video, two-way audio communication, the instruction is deemed interactive. By using the telephone at receiver site locations, students can call in questions and hear their instructor's response on the air. Students can both see and hear their instructor over the classroom television, but are unable to see or talk directly with students located at different sites without routing their calls through the host classroom/studio. The teacher cannot see students, but is able to respond to questions or comments whenever students call in on the telephone line.

Most distance learning satellite systems are also capable of creating hard copy handouts and exams sent via satellite directly to the receiver sites. In most of the satellite networks now in operation, a classroom facilitator who may be an aid, volunteer, or another teacher usually sits in with the students to operate the equipment, distribute materials, and otherwise provide assistance. Student homework assignments are typically routed through the U.S. postal service for the TV teacher's evaluation (Barker, 1991).

Advantages and Disadvantages of Interactive Television Systems

Most two-way TV systems are locally controlled cooperatives made up of three to six schools linked together to electronically share human, financial, and equipment resources. Unlike the one-way video, two-way audio format common to satellite TV systems, in two-way interactive TV systems, the teacher in one location and students in distant locations can both see and hear each other during instruction. Not only are students able to interact with their TV teacher, they are also able to see, hear, and communicate freely with their TV classmates at different schools. Audio interaction is immediate; no telephone dialing is required because microphones are used. Technologies for transmitting two-way TV signals include low-power television, microwave signal, fiber optics, co-axial cable, and digital compression. Among the first rural schools to report success in working with two-way interactive TV systems were small networks in Arizona, Illinois, Minnesota, and Oklahoma (Barker, 1991). Interest and participation by schools in two-way interactive TV systems has grown rapidly in recent years.

Teacher's Role in Classroom-Focused K-12 Distance Education

The bulk of attention given distance education today is classroom-focused. A master instructor speaking to and interacting with students in remote locations simultaneously is the present model for most distance learning programs, including K-12. Success of classroom-focused distance learning programs is ultimately dependent upon the manner and quality of instruction delivered.

From the U.S. Office of Technology Assessment's landmark study, *Linking for Learning: A New Course for Education* (U.S. Congress, 1989, pp. 87-88), the following findings are noted as important components of ongoing classroom-focused distance education programs:

- **The key to success in distance learning is the teacher.** If the teacher on the system is good, the technology itself can become almost transparent. Conversely, no technology can overcome poor teaching; poor teaching is actually exacerbated in distance education applications. But when skilled teachers are involved, enthusiasm, expertise, and creative use of the media can enrich students beyond the four walls of their home classroom. Outstanding teachers can also serve as "electronic mentors" to other teachers.

- **Teachers' concerns about being displaced by technology must be taken seriously.** Systems imposed from above are understandably threatening; however, when teachers are involved in all aspects of planning and implementing distance learning strategies, they can shape the systems to meet the needs of the entire school community.

- **Distance teachers have had to find new ways to structure student-teacher interaction.** Old styles of teaching may not be appropriate or effective. The inherent limitations in distance learning technologies can be catalysts for instructional design and teaching techniques that enhance the learning process.

- **Teachers must be trained if they are to use distance learning technologies effectively.** Training opportunities remain limited, however. Few preservice and inservice programs focus on incorporating technology into instruction, creating new opportunities for interactivity, or developing materials and use the media most effectively.

- **Distance teaching is not for everyone.** For some, nothing can substitute for the intimacy of the classroom. Those who serve as distance teachers report that it takes more time to prepare for class sessions and more effort to compensate for the separation from their students. They must be more organized. Being on stage at all times can be intimidating. But distance teachers are excited about the opportunity to be innovators, to teach the subjects they love to a wider audience of students, and to use technology as a springboard to creativity.

- **Classroom facilitators matter.** How they work with the distance teacher shapes the style of instruction and affects the success of the effort.

Distance Teaching Pedagogy

Distance education instructors of necessity must be master teachers. They must understand and model principles from the literature on effective teaching, and know how to best use technology to convey their teaching. Teachers must possess a "presence" that capitalizes on the use of the television as a teaching medium. In this respect, much can be learned from broadcast journalism—that is, noting how TV anchors look directly into the camera, are precise and articulate in their selection of words, and support their presentations with a high level of visual content.

Distance teaching pedagogy also requires "forced" interaction between teacher and students, a slower pace of instruction, and clear logical presentations. The teacher needs to ask a lot of questions to ascertain if students understand and to keep them actively involved in the instructional process. The following are additional suggestions which distance education teachers might consider to more actively involve students at remote sites in the learning process and make them feel a part of the class (Baker, 1994; U.S. Congress, 1989):

- Meet the distance students personally early in the course. This can be done by visiting each site or teaching from each site at least once.

- Arrange for all the students to meet at least once, ideally at the beginning of a class.

- Ask students to send in pictures of themselves and cards with personal information so the teacher can get to know all of the students better. Then, use this information to learn names and voices to call on individual students, use examples relevant to student interests expressed on the cards, and draw on student experiences to enrich class discussion. Monitor who participates so as to include everyone.

- Hold telephone office hours when students can call and discuss the lessons with the teacher.

- Make use of animated, attentive nonverbal behaviors that establish the teacher's social presence in the remote-site classroom.

- Make use of positive feedback to student participation, expressions of genuine interest in student ideas, and humor as techniques for encouraging student participation.

- Use effective visuals to stimulate participation, changing the screen view at least every 10-15 minutes.

- Utilize a variety of active learning strategies such as student presentations, break-out group sessions, role-playing, and so on, to combat the TV viewing habits developed at home. Be sure to plan far enough ahead that any props can be sent to the remote sites in time.

- Frequently ask for student feedback to monitor understanding, fatigue, boredom, thoughts on class process issues, and so on.

- Train the students in how to participate so that they know they are responsible for getting involved in class, they know how and when to interrupt to get the teacher's attention, and they know how to get the most out of the distance learning experience.

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Assignments

Assignment #1: Teaching and Distance Education

Step 1 Read this chapter.

Step 2 View the videotapes "Linking for Learning: A New Course for Education" and 'Teaching Strategies for Interactive Television," located on reserve in WIU's Main Library Audiovisual Department, level 1. See the Review Questions for a guide to careful viewing.

Step 3 Visit a distance education class that is being offered out of the Electronic Classroom (HH 53). See your instructor for a schedule. Complete the Class Observation Verification Form.

Step 4 Write a short reaction paper about your class observation. A description of this assignment and questions to address in the paper appear at the end of this chapter.

Grading Criteria

This reaction paper will be evaluated using the following criteria:

Provides thoughtful answers to all of the required questions in the reaction paper.

Reaction Paper

Requirements for This Assignment

Acquire a list of the distance education classes that are being offered this semester from your ITT 223 instructor. Select one that fits your schedule. Quietly observe the class from the rear of the Electronic Classroom, taking note of the experience from the teacher's and the learners' point of view. Also, be aware of how the class is being received at the remote sites, as much as is possible. If you happen to select a day that the students are taking an exam, leave and choose another class time. At the end of the class period, ask the technical crew in the control room (rear of Electronic Classroom) to sign your Class Observation Verification Form. Write a two-page, typed reaction to the class observation. You may comment on any aspect of the class you wish, but at a minimum, be sure to include your reactions to the following questions: (Label your responses in the paper's text according to the following numbers.)

1. Briefly describe the class as it was taught, addressing the following matters: what was the dominant teaching strategy used in the class you observed (lecture, combination lecture/discussion, small-group work, other)? What content/topics were covered during class? Was the instructor successful in interacting with the students at the remote sites?

2. From the teacher's perspective, do you think the dominant teaching style appeared to be effective ? (Why or why not?) Was it effective from the remote-site students' perspective? (Why or why not?)

3. What similarities did you notice between this distance class and a traditional higher education class? What differences did you notice?

4. What adjustments do you think might need to be made if the teacher taught in this environment-with K-12 students at the remote sites?

5. What are your thoughts, ideas, and concerns about distance education and its potential impact on your teaching experience in the future?

Review

Key Concepts

distance education
satellite
uplink/downlink
fiber optics
compressed video
microwave
ITFS
remote site
origination site
TV presence
active learning
interaction

Review Questions

Chapter Reading

1. Describe the most common forms of distance education (What are they? What are their strengths and weaknesses? What is the role of the teacher in using them?) and how they are being used in Illinois K-12 schools.
2. What is ISBE's "Expanding the Vision" and how is it likely to affect K-12 education in the next decade?
3. Describe some of the "emerging technologies" that are expected to impact K-12 education in the coming decade.
4. Identify effective distance teaching strategies for interactive television.
5. Describe how WIU is involved with distance education with K-12 schools.

Linking for Learning Videotape

1. Why is distance education important to students in the 1990s?
2. What are the benefits of distance education to students and adults in local communities, whether they be rural or urban?
3. What is the major key to the effectiveness of distance education?
4. What two factors were cited in the video as essential components of effective distance teaching?
5. In what ways might distance education contribute to your own learning as a K-12 teacher?

Teaching Strategies for Interactive Television Videotape

1. Describe the recommendations for using visuals on ITV.
2. Describe recommended techniques for establishing a climate that supports interaction between the instructor and remote-site students.
3. Describe several active learning suggestions made in the videotape and why it is important to use such techniques.
4. Describe several major ways that distance technology can be used to support good teaching.

College of Education and Human Services
Western Illinois University
Macomb, Illinois

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Interactive Multimedia for the Classroom

Dr. Bruce R. Harris & Dr. Molly Herman Baker

Ameritech
WIU Western Illinois University

Tools for Teaching with Technology

The WIU Approach
to Integrating Technology
into Teacher Education

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Interactive Multimedia for the Classroom

Dr. Bruce R. Harris and Dr. Molly Herman Baker
Department of Instructional Technology and Telecommunications

Module Context

Course Description

ITT 223 - This course enables students to gain expertise in using computers and computer-related technologies in the public schools. It emphasizes computer applications, evaluation and selection of educational software programs, interactive multimedia, and educational telecommunications.

Course Prerequisites

None

Additional Courses Where Module Could Potentially Fit

Any teacher education course which requires students to utilize multimedia applications in the curriculum

Other Relevant Student Characteristics

Undergraduate students majoring in Education, with an emphasis on Elementary Education

Module Focus

Title of the Module

Interactive Multimedia for the Classroom

Content Area of the Module

Use and development of interactive multimedia for the K-12 classroom

Description of the Module

Overall, the emphasis is on what interactive multimedia is, the types of multimedia curriculum materials available to K-12 classrooms, and some basic ways to create or customize hypertext instructional materials.

Ameritech Student Outcome(s) Supported

- To evaluate and use communications technologies along with computers and multimedia to support the instructional process.

- To identify resources for a wide array of academic subjects for elementary and secondary grade levels.

Specific Module Objectives

- To effectively operate a Macintosh computer.

- To identify common criteria often used to select and evaluate interactive multimedia for educational purposes, review several applications, using the criteria, and identify some exemplary titles pertinent to one's major.

- To describe the various types/levels of interactive multimedia.

- To produce a simple hypertext-based lesson on the computer.

Technology Competencies Developed Through the Module

Awareness

Students will have opportunities to see a variety of multimedia applications demonstrated in class, while learning to recognize the level/type of each.

Hands-On Experience

Students will actually review and evaluate several multimedia applications pertinent to the K-12 classroom in which they expect to teach. They will also create their first, simple hypertext lesson.

Skill Development

All four modules in this course continue to build skills and confidence in using the Macintosh computer for classroom use.

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Module Contents

Teaching Strategies

The role of the instructor is to demonstrate the desired learning outcomes and provide guided practice as the students develop the desired skills.

It is necessary for the instructor to have demonstration equipment available (such as an LCD panel or an electronic classroom) to demonstrate the skills and computer applications. Since most of the learning outcomes are procedural, the teaching strategies of demonstration, coaching, and guided practice are key.

All the documents produced and given out in class are produced using the software the students will use. The instructor models how the applications demonstrated could be used for personal use as well as in the K-12 classroom.

Learning Strategies

Except for the instructor demonstration, the students are actively involved in completing the lessons in the workbook to gain the desired learning outcomes. Students also learn process skills such as cooperative learning when they work with other students to complete their assignments.

Ways Students Will Demonstrate Competency

Students demonstrate competency by evaluating several interactive multimedia applications and submitting the written evaluations to the instructor. The instructor reviews the evaluations and provides specific feedback to each student. In addition, students also produce a simple hypertext-based lesson and print this lesson for the instructor.

Ways Students Will Learn How To Use Technology in Their Classrooms

Each of the assignments are focused on how teachers can use the interactive multimedia application in their classroom, thus resulting in increased opportunities for transfer to the everyday work environment. Students are better able to visualize the potential of these delivery systems in reaching children with several different learning styles and learning modalities.

Module Implementation

Print Materials Needed

A workbook was developed specifically for this module (along with three other core modules). See Supplementary Materials for a copy of this module which was included in the workbook. In addition, students complete several additional readings which are listed in the workbook.

Equipment/Technology Needed

- At least one Macintosh computer and a CD-ROM drive
- Videodisc player
- Laser printer
- Access to Apple II series computers
- Access to MS-DOS compatible computers
- Demonstration equipment (e.g., LCD panel, electronic classroom)

Software or Other Electronic Media Needed

- Interactive Multimedia Educational Software Programs developed for K-12 children for the students to review with the Macintosh computer (These programs should include both CD-ROM and interactive videodisc applications.)
- Hypercard for the Macintosh

Implementation Recommendations

It is critical for the instructor to be prepared for the module by completing all the assignments listed in the module workbook, so that he or she can answer student questions during the guided practice sessions. In addition, he or she must reserve any demonstration or computer lab equipment needed for class.

Supplementary Materials

Interactive Multimedia

The term "multimedia" appears in nearly every article, book, television program, or conference presentation in which educational technology is being discussed. Confusion abounds because the definitions used by these authors often vary. In its oldest, most general sense, multimedia refers to the process of delivering a message using two or more media components. The components could be as simple as a lecture presentation supported by a set of slides. Although the additional component may make the message more appealing or even more effective than a lecture alone, this traditional approach assumes a passive learner who is listening/watching a knowledgeable instructor present information. It reflects a tradition of teacher talk that was employed for centuries because of the lack of any other source (print or otherwise) of knowledge. Some current advertisements for multimedia products assume this more didactic instructional modality.

Sometimes an author uses the term multimedia when the more accurate term, "interactive multimedia," would be more descriptive of the type of instruction being referenced. This term refers to two or more visual or audio sources controlled by a computer that together create a multisensory information environment (Galbreath, 1994). Interactive multimedia requires the learner to be an active participant rather than a spectator. He or she interacts with a computer by answering questions, making choices, or manipulating objects on the screen. The program responds to each learner in different ways, accessing and displaying information that may come in the form of text (words or numbers), still images (graphics, photos), video (full-motion or compressed movies, animation), and/or sound (voice, music, sound effects). Interactive multimedia products usually require a combination of hardware, software, and storage technologies. When used in schools, they can radically change the relationship between the teacher and the student. No longer a "sage on the stage," the teacher becomes a "guide on the side," a partner in learning.

One form of interactive multimedia is called *hypermedia*. This special type of interactive software organizes information in a nonlinear, nonsequential manner so that learners may explore it in ways that are meaningful to them. Through the use of menus, buttons, and navigational maps, learners browse and explore the multimedia content (i.e., text, photos, video, animation, speech, music, and so on). Simple authoring programs for creating hypermedia are also available for teachers or students to create their own lessons (called "stacks"). This chapter will focus on sequential interactive multimedia as well as on hypermedia and how they are both being used in the schools.

Objectives

At the completion of this unit, you will be able to

- Define multimedia, interactive multimedia, and hypermedia.
- Describe how multimedia technologies are used to promote learning in schools.
- Describe the three basic levels of interactivity associated with videodiscs.
- Load and execute CD-ROM and videodisc educational applications.
- Evaluate commercial CD-ROM and videodisc educational applications.
- Develop an interactive, instructional Hypercard stack.

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Resources To Be Used

Readings

- Title: "Compact Disc-Read Only Memory"
  Barron, A. E., & Orwig, G. W. (1993). Compact Disc-Read Only Memory (CD-ROM). In *New technologies for education: A beginner's guide* (pp. 18-48). Englewood, CO: Libraries Unlimited.

- Title: "Interactive Videodisc"
  Barron, A. E., & Orwig, G. W. (1993). Interactive videodisc. *New technologies for education: A beginner's guide* (pp. 50-82). Englewood, CO: Libraries Unlimited.

- Title: "What Multimedia Can Do In Our Classrooms"
  Kanning, R. G. (1994, April). What multimedia can do in our classrooms. *Educational Leadership*, *51*(7), 40-44.

- Title: "Putting Computer Projects at the Heart of the Curriculum"
  Muir, M. (1994, April). Putting computer projects at the heart of the curriculum. *Educational Leadership*, *51*(7), 30-32.

- Title: "Software Evaluation"
  Merrill, P. F., Tolman, M. N., Christensen, L., Hammons, K., Vincent, B. R., & Reynolds, P. L. (1992). Software evaluation. *Computers in education* (2nd ed.) (pp. 109-119). Boston: Allyn and Bacon.

Other Resources

- Hypercard (software)

- Choice of a CD-ROM title

- Choice of an interactive videodisc title

Background

Historically, educational methods have been influenced by the technologies available to an instructor. The oral tradition, for example, was used for centuries because "teacher talk" was the only accessible source of information to most learners. Then the printing press extended the learning environment beyond the oral classroom to the library; it also made it possible for learners to examine multiple perspectives presented by various "teachers" and contributed to the need for learners to develop critical thinking skills as they weighed the merits of these various outlooks.

With the development of image technologies (photography and video), the potential for visualizing information was realized. Using images expanded learner access to information by transcending the limitations of language and literacy problems. Images also provided new dimensions for understanding many topics that could not be adequately presented via verbal description. Although instruction remained the primary responsibility of the teacher, the breadth of tools for effective and varied instructional strategies had greatly expanded from the days when only a teacher's individual knowledge could be orally transmitted to the students.

With the onset of digital and interactive media, additional primary sources of data (e.g., sound, animation, compressed video) can now be used to enrich traditional verbal and visual content. Even the structure of the lesson can be dynamically altered (i.e., changed immediately according to learner responses to interactive activities) to fit the specific learning needs of the individual student. This new potential is fueling renewed interest in "discovery" approaches to K-12 education, placing the instructor and student in a learning partnership. Students are able to explore content in ways that match their interests and learning styles, to integrate ideas and create new knowledge, and to express themselves using multiple modalities (Noblitt, 1994).

Interactive multimedia has an enormous potential for altering the way that children learn and schools educate. Although it does not replace oral, print, or image media, it does alter the way they are used for education.

What Is "Interactive Multimedia"?

Before we discuss how "interactive multimedia" (IMM) is actually used for teaching and learning, let's explore what components make it "interactive," make it "multi," and make it "media" based. First of all, it is important to realize that IMM is not one thing. It is a combination of hardware, software, and storage technologies. In fact, many different combinations of these components can create an interactive multimedia teaching or learning experience.

First, let's explore the "interactive" nature of the concept. Recall the definition of interactive multimedia: two or more visual or audio sources *controlled by a computer* that together create a multisensory information environment. Actually, what "controlled by the computer" means is that as users interact with the computer, the software program displays certain information. IMM users, whether they are teachers or learners, may use a variety of input devices to interact with the computer. Probably the most common ones are the keyboard and the mouse. However, touch screens, graphics tablets, light pens, and a number of special switches developed for children with special needs can also be used to "tell" the computer what menu item to pursue, what topic to access and display, or what action to apply to an object on the screen. The point is that interactive multimedia permits, encourages, and demands that the learner respond in order for the program to progress. How the computer responds may be preprogrammed and sequential (i.e., Go on to Step 2 if the answer is correct; go back and review Step 1 if the answer is incorrect) or it may be learner-directed and nonsequential as in many hypermedia applications.

Next, what is "multi" about multimedia? Generally speaking, "multi" refers to the multiple modalities of the various components of the IMM program the learner is experiencing or exploring. Music, voice, sound effects, animation, text, video, still images, and graphics may all be a part of an IMM application. For example, if the interactive multimedia program is a lesson about gorillas, it may include some textual information, a photo of gorillas' natural habitat, a video of a gorilla as it takes care of its young, a sound track of the sounds gorillas use to communicate with each other, and an animated graphic of gorilla population statistics over the past 100 years.

"Multi" can also refer to the multiple components which are necessary for the development of, exploration of, or display of the multimedia topic. For example, in creating a program like the one described above, all of the pieces of information must be identified and "captured" from various media sources (described below). Usually, the data collection is stored on a videodisc or a CD-ROM because of the high memory requirements of many video and sound files (see the readings for details about these storage technologies). To participate in the IMM experience, the learner may need multiple pieces of equipment such as a computer, a CD-ROM drive, a videodisc player, audio speakers, a VCR, and/or a TV monitor.

The "media" aspect of IMM refers to the specific sources of information that have been drawn upon to assemble the data for the IMM program. Visual information, for example, can be created with a video camcorder, a camera with slide or regular film, a digital camera, or a computer graphics or animation program. Visual information can also be selected from prerecorded videotapes, scanned images, videodiscs or CD-ROMs, and downloaded visual files from databases on the Internet. Audio information can be selected from music CDs; collections of sound effects; audio tracks from movies, TV programs, or famous speeches; and so on. Music, sound effects, and voice can also be created using a microphone connected to the computer or audiotape player. Due to the unclear copyright laws regarding use of visual and audio sources in multimedia, it is very important that the IMM author acquire copyright clearance to use some of these sources, particularly if he or she intends to sell the IMM product. Public domain and shareware collections of video and sound are also available today. Any visual or sound files that are acquired in these collections, or ones that are downloaded or created on the machine itself, do not need special equipment. However, if the computer is being used to "capture" visual information, it must have a digitizing board installed to convert the analog signals to digital.

To summarize, interactive multimedia is a learning experience that is created when a learner interacts with a computer, thereby accessing and displaying information that appears in multiple formats. Due to the large memory requirements of many of these formats, the computer is often drawing the information from other pieces of equipment such as a CD-ROM drive or videodisc player.

Learning with Interactive Multimedia

Before reading this section, read the reserve readings on CD-ROMs and interactive videodiscs.

Thousands of videodiscs and CD-ROMs have been produced for use in K-12 educational environments. Because of the larger storage capacity (up to 30 minutes of video or 54,000 frames) and the higher quality of video available on videodiscs, they have been the technology of choice for linear movies. Other types of content that frequently appear on videodisc include interactive tutorials, games, libraries, visual databases, and simulations. Most titles are written for Level I or Level III purposes. Because of the built-in CD-ROM drives that are being included with many of the new computers today and the lower cost of the CD-ROMs themselves, they have become particularly popular in schools. Encyclopedias, reference works, databases, interactive books, games, music, catalogs, software, and clip-art collections are available on CD-ROM.

These products are used in four primary ways in K-12 classrooms. Interactive tutorials that guide the students through the material on the discs are available for many titles. Students function almost independently as they learn the content, interacting with the computer in ways that allow the program to respond to individual student responses and to keep track of student performance. In fact, some schools have purchased entire curricula in this format.

Secondly, teachers who wish to use multimedia to enhance their presentations repurpose the discs by writing a hypermedia control program (i.e., a program that displays preselected segments from a disc that illustrate various parts of their presentation). They preview still images, video clips, and other information that they might want to include in their presentation using the index, log, frame numbers, or bar codes supplied with the disc. Then, they create hypermedia buttons tied to their outline to access the images that they have preselected. This is an interesting exercise that older elementary students can do, as well, alone or in collaborative groups (D'Ignazio, 1993).

A third common activity is to give students free access to the CD-ROMs or videodiscs available in the classroom or media center. Unstructured exploration may be permitted, although some teachers have found that many students wander around without learning much. They may get disoriented, that is, get so far afield from where they started out that they aren't sure how to make use of the many places they have explored. Most teachers find it useful to assign a project, a problem to be solved, a topic to be researched, a game to be played, or some other type of direction that the students can use as a guiding light to focus their exploration—a kind of customized inquiry. Within this general framework, then, flexible, nonlinear searching of relevant information can be exciting, particularly within cooperative learning groups. Written reports can be generated from what they have learned, or they can create a technology-based creative product as described below (Cannings & Finkel, 1993; D'Ignazio, 1993).

Videodiscs and CD-ROMs are effectively being used as sources for components of creative projects, those that integrate ideas or solve problems or express ideas. For example, students can search databases and other compendiums of information on videodiscs or CD-ROM discs for visuals, audio clips, textual information, and so on, that can be used to "teach" a topic via hypermedia. The project can even be outputted to videotape with voice narration. Students can write a textual document on a topic and annotate key words in the text with graphics, sound, simple animations, or photos downloaded from the discs. They can publish student movies, video yearbooks, radio documentaries, computer slide shows, joint news programs, or newspapers with classes from other parts of the country or the world via telecommunications. The creative possibilities are endless and go a long way toward creating the kind of cooperative teamwork skills children need to learn in addition to the technology skills and content knowledge so basic to their education (D'Ignazio, 1993; Rieber, 1994).

Teaching with Hypermedia

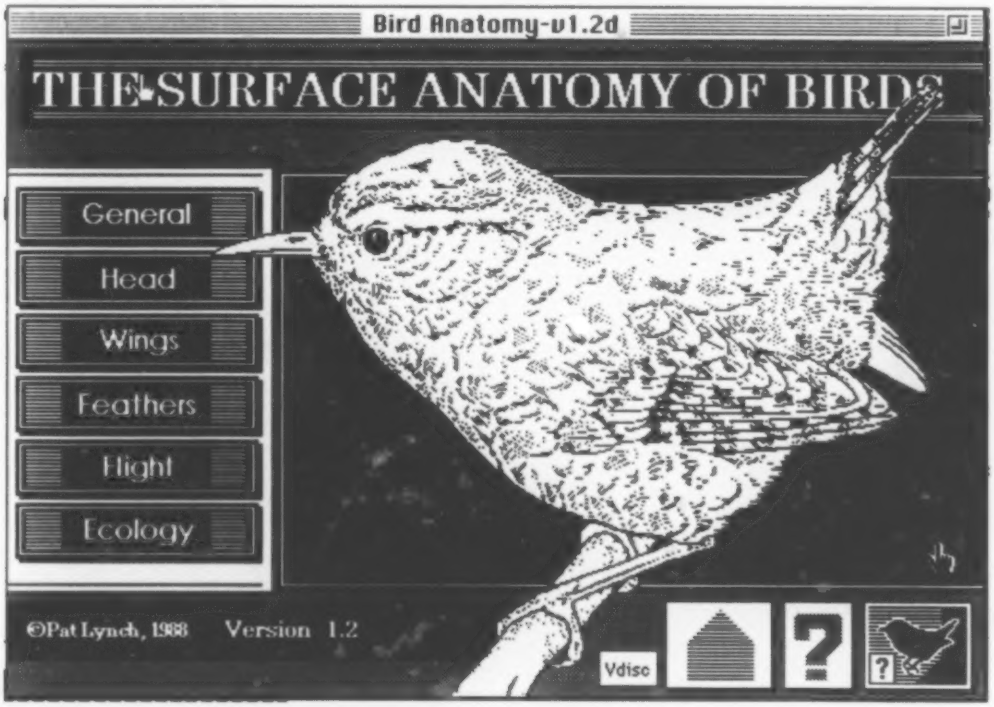
As we have discussed above, hypermedia as a product usually presents a learning environment that is nonsequential, nonlinear, and exploratory, that is, it encourages browsing and learner-controlled searching. The hypermedia product is called a "stack" because it functions much like a stack of index cards assembled on a particular topic. Many commercial stacks are available for educational use, and many shareware stacks can be obtained from user groups and on the Internet.

However, hypermedia is also an authoring tool. Teachers can use hypermedia applications such as Hypercard or Supercard (Macintosh) or Linkway or Toolbook (IBM) to create efficient database templates for organizing information or to create interactive computer-based instruction. You may wish to author a stack, for example, to keep track of your cassettes and CDs, baseball cards, business inventories, expenses, stamp collection, or recipes. As a teacher, you may want to create a stack for your children's book collection, science experiment results, foreign language "flashcards," clip art, and so on. These hypermedia stacks often do not contain multimedia components. They are simply text fields that permit nonlinear searching by field or keyword, a much more efficient means of locating information than the traditional index card stack.

Hypermedia used as an authoring tool to create interactive, computer-based instruction is a relatively simple, creative way of writing customized learning tools for your classroom. A stack may be developed to repurpose/control a videodisc to provide a more structured learning experience for your students, or it can create an independent learning environment on a topic you'd like your students to explore. In this chapter, you will be able to get an idea of what's involved in designing an instructional stack by completing an assignment.

Let's look at an example of a Hypercard stack that a teacher developed on bird anatomy (Lynch, 1988). Figure 1 displays the opening screen when the user double-clicks on the stack icon. There are many buttons which the teacher has created here. Some are obvious; they are the buttons that appear along the left and bottom of the screen. Others are transparent; they are invisible and overlay the visual objects on the screen, functioning when you click on that part of the visual. More about how that works later.

Figure 1



By clicking on the "general" button, the following card in the stack (Figure 2) appears on the screen. Had the user selected any of the other buttons, a different screen would have appeared.

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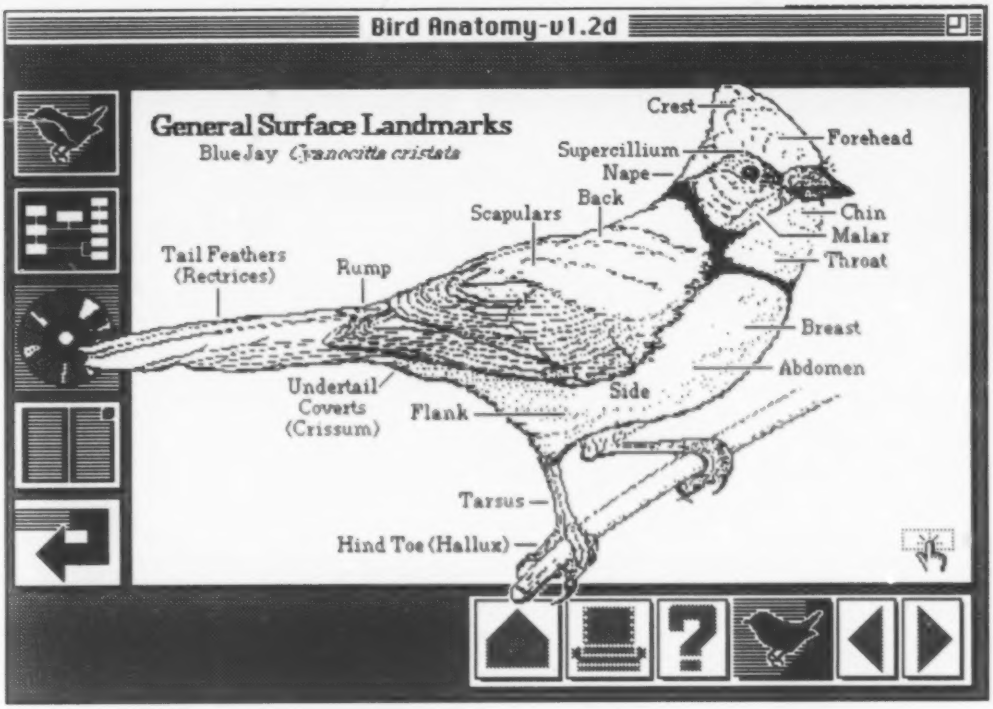
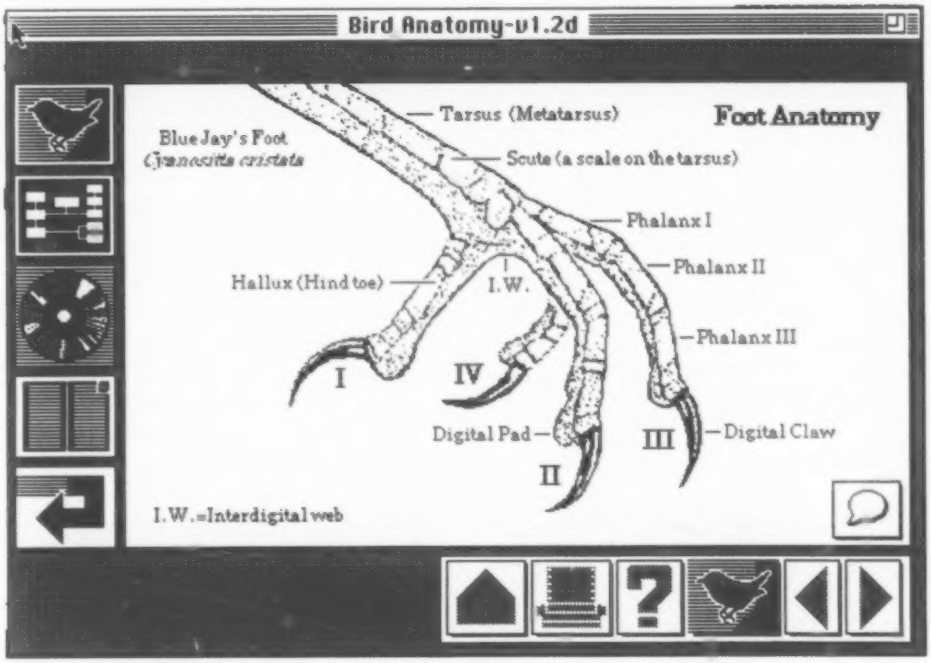
Figure 2


Bird Anatomy-v1.2d
General Surface Landmarks
Blue Jay Cyanocitta cristata
Crest
Forehead
Supercillium
Nape
Back
Scapulars
Chin
Malar
Throat
Tail Feathers (Rectrices)
Rump
Breast
Abdomen
Side
Undertail Coverts (Crissum)
Flank
Tarsus
Hind Toe (Hallux)
?

By clicking on the foot of this bird, the stack selects the screen displayed in Figure 3. Had the user clicked on any other part of the bird or any of the buttons along the edge of the screen, a different screen would have appeared.

Figure 3


Bird Anatomy-v1.2d
Foot Anatomy
Blue Jay's Foot
Cyanocitta cristata
Tarsus (Metatarsus)
Scute (a scale on the tarsus)
Phalanx I
Phalanx II
Phalanx III
Hallux (Hind toe)
I.W.
I
IV
II
III
Digital Pad
Digital Claw
I.W.=Interdigital web
?

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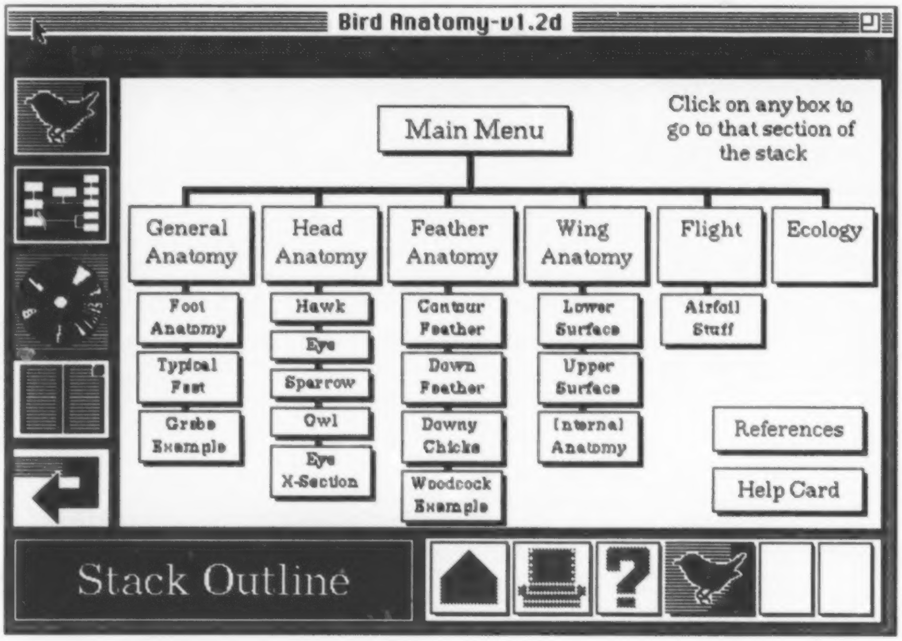
Next, the user might want to see what all of the components are to choose from and explore. By selecting the outline button (second from the top on the left side of screen), the screen below appears (Figure 4), providing a nice navigational map to the learner.

Figure 4



Bird Anatomy-v1.2d

Click on any box to go to that section of the stack

Main Menu
General Anatomy
Head Anatomy
Feather Anatomy
Wing Anatomy
Flight
Ecology
Foot Anatomy
Typical Feet
Grebe Example
Hawk
Eye
Sparrow
Owl
Eye X-Section
Contour Feather
Down Feather
Downy Chicks
Woodcock Example
Lower Surface
Upper Surface
Internal Anatomy
Airfoil Stuff
References
Help Card
Stack Outline
?

The student can click on any of the boxes in the outline and the program will choose the appropriate "card" in the stack. This is truly "interactive," nonsequential computer-based learning. This particular stack also has many sound effects so that the learner can hear bird sounds. The stack is available free on the Internet. Perhaps it has given you one idea of how a hypermedia stack can be developed to teach your students a topic such as bird anatomy. Groups of students can be equally innovative in developing their own stacks as well.

References

Cannings, T. R., & Finkel, L. (Eds.). (1993). *The technology age classroom*. Wilsonville, OR: Franklin, Beedle and Associates.

D'Ignazio, F. (1993). Articles 4, 5, 6. In T. R. Cannings & L. Finkel (Eds), *The technology age classroom* (pp. 483-502). Wilsonville, OR: Franklin, Beedle and Associates.

Galbreath, J. (1992, April). The educational buzzword of the 1990s: Multimedia, or is it hypermedia, or interactive multimedia, or . . . ? *Educational Technology, 32*(4), pp. 15-19.

Hypercard [Computer Program]. Mountain View, CA: Claris.

Lynch, P. J. (1988). *Bird anatomy* (Computer Program). New Haven, CT: Yale University School of Medicine.

Noblitt, J. (1994). Enhancing instruction with multimedia. *Selected papers from the fourth national conference on college teaching and learning*. Jacksonville: Florida Community College.

Rieber, L. P. (1994). *Computers, graphics, and learning*. Madison, WI: Brown and Benchmark.

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Review

Key Concepts

interactive multimedia
hypermedia
videodisc
CD-ROM
Levels I, II, and III
repurpose
input device
CD-I
DVI
frame
copyright

Review Questions

1. According to the readings by Muir and Kanning, how does multimedia contribute to meeting curriculum goals of school districts?

2. How do computer diskettes, videodiscs, and CD-ROMs compare in how much data they can store and the types of data they store best?

3. Explain how several types of CD-ROMs and videodiscs can be used in K-12 classrooms (draw on readings in this book as well as Barron and Orwig's chapter readings).

4. What questions could you ask a publisher about its "multimedia" product to determine if it is interactive enough for your students?

5. What is the difference between interactive multimedia and hypermedia?

6. Describe the three levels of interactivity associated with videodisc technology. Which ones are commonly used in schools?

Assignments

Before beginning these assignments, you should be familiar with the "Software Evaluation" reserve reading.

Assignment #1: CD-ROM Evaluation

Getting Started

1. Select a CD-ROM application to review. There are several CD-ROM discs available in the Horrabin Hall Computer Lab. At the time this book went to print, the following four CD-ROM applications were available in the lab. However, new CD-ROM discs are continually being purchased by the College of Education and Human Services for preview in the lab. Please ask the lab assistant on duty what additional CD-ROM discs and manuals are now available.

   - *Arthur's Teacher Trouble*: An interactive children's book on CD-ROM
   - *Just Grandma and Me*: An interactive children's book on CD-ROM
   - *The New Grolier Multimedia Encyclopedia*: An interactive encyclopedia on CD-ROM with motion picture features
   - *A Long Hard Day on the Ranch*: An interactive children's book on CD-ROM

2. Ask a lab assistant for the CD-ROM disc which you selected and its accompanying documentation (if available).

3. Take the CD-ROM disc and documentation which you selected to a CD-ROM computer station. Ask the lab assistant if you need help locating one of these stations.

Starting the CD-ROM Disc

1. Turn on the CD-ROM player (if it is not already on).
   If you are unsure which machine is the CD-ROM player, ask a lab assistant for help.

2. Insert the CD-ROM disc (which is inside a case called a caddie) into the CD-ROM player, disc side up with arrow pointing towards the wall.

3. You should now see an icon of the CD-ROM disc on the "desktop" of your Macintosh.
   If you do not see the icon of the CD-ROM on the Macintosh desktop after inserting the CD-ROM disc, reset the Macintosh Computer. To reset, choose Restart from the Special Menu.

   After the computer comes back up, you should see an icon of the CD-ROM disc just under the icon for the Macintosh hard disk icon.

Review the CD-ROM Disc of Your Choice

1. Review the CD-ROM application of your choice. If you have any problem or questions about the program, first refer to the documentation. If you cannot answer your question from the manual, ask a lab assistant.

   If you selected . . .

   Arthur's Teacher Trouble

   - Double click on the "Living Books" icon.
   - Double click on the "Arthur's Teacher Trouble" icon.

   Just Grandma and Me

   - Double click on the "Living Books" icon.
   - Double click on the "Just Grandma and Me" icon.

   The New Grolier Multimedia Encyclopedia (You will probably need the manual for this program.)

   - Double click on the "NGME Mac" icon.
   - Double click on the "New Multimedia Encyclopedia" icon.

   A Long Hard Day on the Ranch

   - Double click on the "Ranch" icon.
   - Double click on the "A Long Hard Day on the Ranch" icon.

   When you are finished reviewing the CD-ROM you selected, perform the following tasks:

   1. Quit the program and get back to the Macintosh desktop.
   2. Drag the icon of the CD-ROM program to the trash can to eject CD-ROM disc.
   3. Return the CD-ROM disc and documentation to the lab assistant.
   4. Leave the CD-ROM player on.

Evaluate the CD-ROM Disc Which You Reviewed

Using a word processor, type and print an evaluation of the CD-ROM application which you reviewed. In your evaluation report, you should write a brief paragraph addressing each of the following criteria as explained in the reading on reserve entitled "Software Evaluation."

- Instructional Criteria
- Screen Format
- Navigation
- Ease of Use
- Interaction

Your paragraph on each criterion should explain how well the CD-ROM application which you reviewed met the criteria specified in the explanation in the "Software Evaluation" reading. You should have a minimum of five paragraphs in your document and it should contain your name, section number, date, and MM #1 in the header of the document.

Assignment #2: Interactive Videodisc Evaluation

Getting Started

1. Select a Videodisc application to review. There are several videodiscs available in the Horrabin Hall Computer Lab. At the time this book went to print, the following four videodisc applications were available in the lab from which you can choose. However, new videodiscs are continually being purchased by the College of Education and Human Services for preview in the lab. Please ask the lab assistant on duty what additional videodiscs and accompanying manuals are now available.

    - *Animal Pathfinders*: An interactive videodisc that deals with the exciting world of animals.

    - *In the Holy Land*: An interactive videodisc that deals with the troubles in the Holy Land.

    - *The Great Ocean Rescue*: An interactive videodisc that takes a class on a journey in the ocean to rescue items from different dilemmas. This program should be done in a cooperative group or two or more.

    - *The Great Solar System Rescue*: An interactive videodisc that takes a class on a journey in the solar system to rescue items from different dilemmas. This program should be done in a cooperative group of two or more.

2. Ask a lab assistant for the videodisc which you selected and its accompanying documentation (if available).

3. Take the videodisc and documentation which you selected to a designated videodisc computer station. Ask the lab assistant if you are unsure where one of these stations is located.

Starting the Computer and Loading the Videodisc

1. Turn on the computer (if it is not already on).
   To turn on the computer, press the rectangular button with a sideways triangle on it at the very top of the keyboard. This should start both the computer and the monitor. If the monitor does not come on, then press the button on the bottom right front of the monitor to turn it on. A small green light directly above the button indicates that the monitor is on. If the light is on, but the monitor is not working, ask a lab assistant for assistance.

2. Turn on the videodisc player and television monitor (if it is not already on).
   To turn on the videodisc player, press the power button on the bottom, left, front of the player. Most of the television monitors can be turned on by pressing the power button on the front of the monitor. If there is a problem, ask a lab assistant for help.

3. Open the videodisc disc table in order to load the actual videodisc.
   To open the disc table, press the ***OPEN/CLOSE*** button on the right front side of the player. The drawer will open automatically.

4. Starting the videodisc.
   In order to start (load) the videodisc, you must first remove the videodisc from the cardboard or plastic that it is stored in. After removing the disc from its protective wrapping, place the disc into the tray with the side 1 or A (depending on the videodisc) facing the ceiling.

5. Close the videodisc disc table.
   In order to close the videodisc disc table, press the ***OPEN/CLOSE*** button on the videodisc player.

Review the Videodisc of Your Choice

1. Review the videodisc of your choice. If you have any problems or questions about the program, first refer to the documentation. If you cannot answer your question from the manual, ask a lab assistant for assistance.

2. If you need help locating the appropriate software on the Macintosh computer for running and controlling the videodisc, see a lab assistant for help. Several step-by-step instructions are available in the Horrabin Hall Computer Lab for helping you locate the Macintosh software and begin the videodisc application, depending on which program you selected.

Evaluate the Videodisc Which You Reviewed

Using a word processor, type and print an evaluation of the videodisc application which you reviewed. In your evaluation report, you should write a brief paragraph addressing each of the following criteria as explained in the reading on reserve entitled "Software Evaluation."

- Instructional Criteria
- Screen Format
- Navigation
- Ease of Use
- Interaction

Your paragraph on each criterion should explain how well the videodisc application which you reviewed met the criteria specified in the explanation in the "Software Evaluation" reading. You should also include comments regarding how well the videodisc application which you reviewed met the specific criteria discussed in the background section of this chapter. For example, at which level of interactivity would you classify the videodisc program you reviewed? These specific criteria should be included under each of the five major criteria listed above. You should have a minimum of five paragraphs in your document and it should contain your name, section number, date, and MM #2 in the header.

Assignment #3: Developing a Hypercard Stack

Getting Started

1. Use the procedures specified in class for logging into the Mac.Sys fileserver and open the window for the Mac.Sys icon on the desktop.

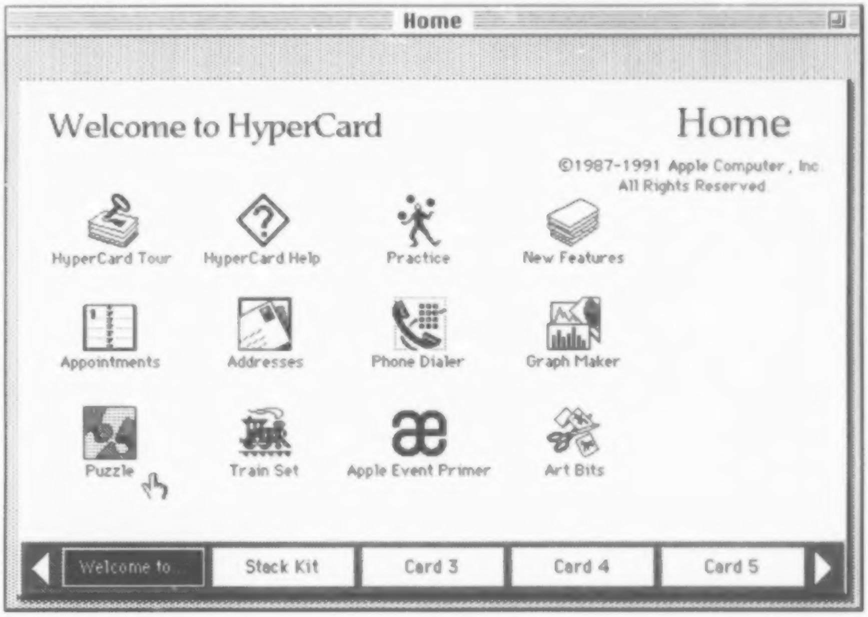
2. Double-click on the MacPrograms folder.

3. Double-click on the Database folder.

4. Double-click on the Hypercard folder.

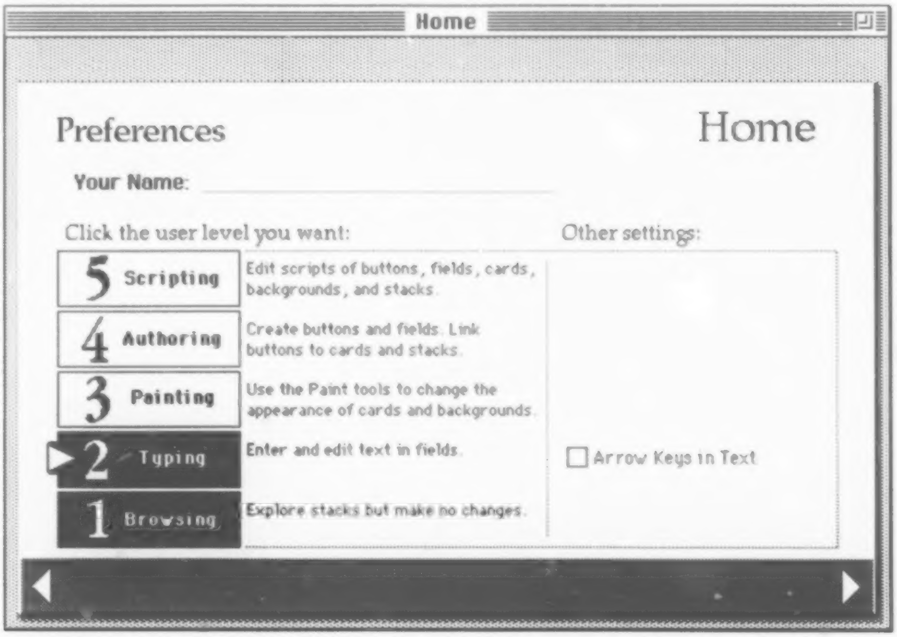
5. Double-click on the Hypercard icon.

This Hypercard icon looks like a stack of index cards and is titled Hypercard. The Home Card will open and show on the screen.


Home
Welcome to HyperCard
Home
©1987-1991 Apple Computer, Inc.
All Rights Reserved
HyperCard Tour
HyperCard Help
Practice
New Features
Appointments
Addresses
Phone Dialer
Graph Maker
Puzzle
Train Set
Apple Event Primer
Art Bits
Welcome to...
Stack Kit
Card 3
Card 4
Card 5

Select the User Level

1. Click the Left Arrow at the bottom, left side of the screen next to the box which says "Welcome to . . . ." The Preferences Card should now appear on your screen.


Home
Preferences
Home
Other settings:
☐ Arrow Keys in Text

Your Name:

Click the user level you want:

5 Scripting — Edit scripts of buttons, fields, cards, backgrounds, and stacks.

4 Authoring — Create buttons and fields. Link buttons to cards and stacks.

3 Painting — Use the Paint tools to change the appearance of cards and backgrounds.

2 Typing — Enter and edit text in fields.

1 Browsing — Explore stacks but make no changes.

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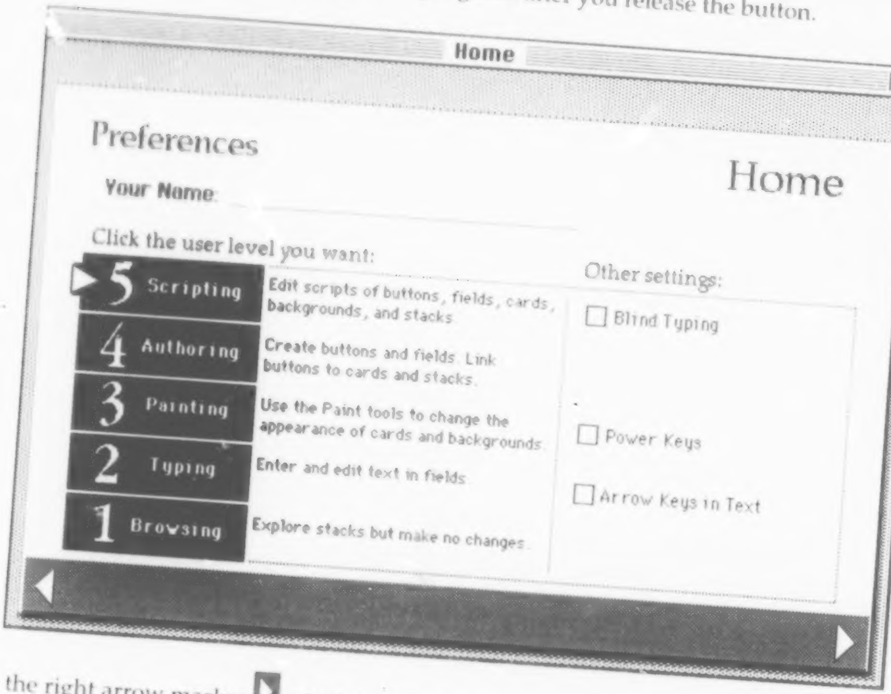
2. Grab the arrow marker which is just to the left of the "2 Typing" box on the left side of the screen and drag the arrow upward to the "5 Scripting" box so that it is next to the 5.
The boxes for all five numbers should be highlighted after you release the button.



Preferences

Home

Your Name:

Click the user level you want:

5 Scripting — Edit scripts of buttons, fields, cards, backgrounds, and stacks.

4 Authoring — Create buttons and fields. Link buttons to cards and stacks.

3 Painting — Use the Paint tools to change the appearance of cards and backgrounds.

2 Typing — Enter and edit text in fields.

1 Browsing — Explore stacks but make no changes.

Other settings:

☐ Blind Typing

☐ Power Keys

☐ Arrow Keys in Text

3. Click on the right arrow marker ▶ which is located on the lower, right side of the screen.
This takes you back to the Home Card (which reads "Welcome to Hypercard").

Create a New Stack

In this lesson, you will create a small Hypercard stack, showing how Hypercard could be used by a teacher to develop computer-based instruction. You will develop a short, interactive stack designed to determine if preschool students can identify different shapes such as a circle, rectangle, and so on.

1. From the File menu, choose New Stack.
A dialog box will appear.

2. Name the new stack by typing *Shapes*

3. Insert your disk if it is not already in the disk drive.
If your disk has already been inserted, choose the Desktop button and double-click on the name of your disk so that the name of your disk appears in the top, left side of the dialog box.

4. Choose the New button.
You should now see a blank window with the name of Shapes in the title bar.

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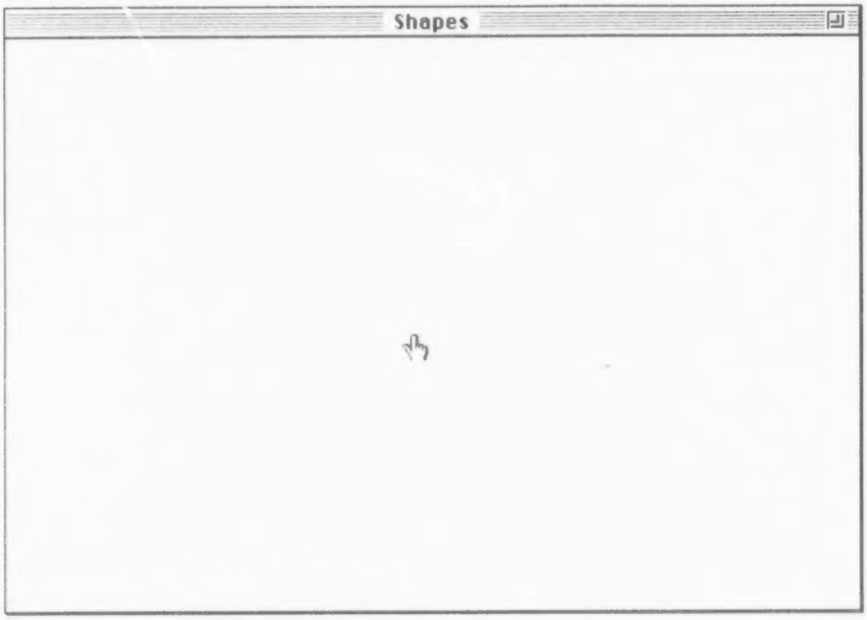
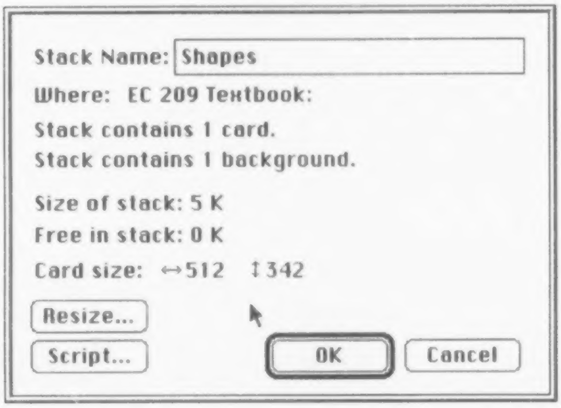


Check Your Work

1. From the Objects menu, choose Stack Info.
   A dialog box will appear.



Stack Name: Shapes

Where: EC 209 Textbook:

Stack contains 1 card.

Stack contains 1 background.

Size of stack: 5 K

Free in stack: 0 K

Card size: ↔512 ↕342

2. Note information: stack name, location of new stack, number of cards, and so on.

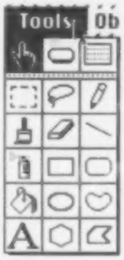
3. Choose the OK button to close the dialog box and return to the Shapes stack.

Create a Background

A card is composed of background layers and foreground (or card level) layers. The background contains objects (such as buttons or text fields) and graphics that will be common to a continuous series of cards in the stack. Anything in the background will show on each card associated with it; thus, the background acts as a "template" for your cards.

1. From the Edit menu, choose Background.
   Notice that the menu bar has hash marks on it. This is an important visual clue that you are in the background.

2. Click on the Tools menu and drag the tools palette to the right side of the screen.



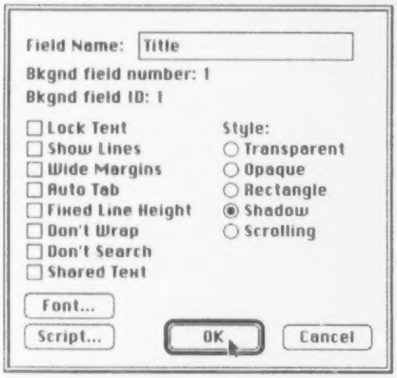
Create a New Field for the Background

1. From the Objects menu, choose New Field.
   Choosing the New Field menu option creates a new card field for the background.

2. Double-click inside the new field to access the field attributes dialog box.

3. Give the field a name by typing *Title*.

4. From the Style options, choose Shadow.

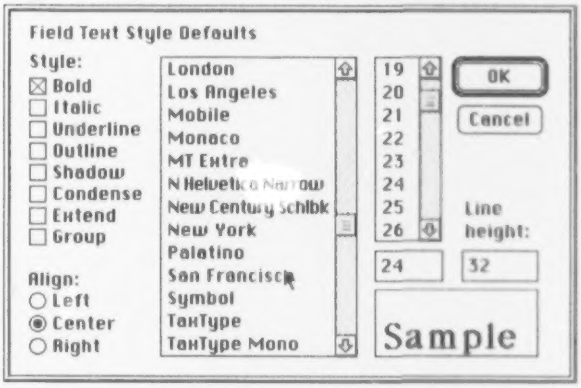


Field Name: Title
Bkgnd field number: 1
Bkgnd field ID: 1

☐ Lock Text
☐ Show Lines
☐ Wide Margins
☐ Auto Tab
☐ Fixed Line Height
☐ Don't Wrap
☐ Don't Search
☐ Shared Text

Style:
○ Transparent
○ Opaque
○ Rectangle
● Shadow
○ Scrolling

5. Choose the Font button to access the font dialog box. From the list of fonts, choose New York. From the list of font sizes, choose 24 pt. From the Style options, choose Bold. From the align options, choose Center.



Field Text Style Defaults

Style:
☒ Bold
☐ Italic
☐ Underline
☐ Outline
☐ Shadow
☐ Condense
☐ Extend
☐ Group

Align:
○ Left
● Center
○ Right

London
Los Angeles
Mobile
Monaco
MT Extra
N Helvetica Narrow
New Century Schlbk
New York
Palatino
San Francisco
Symbol
TaxType
TaxType Mono

19
20
21
22
23
24
25
26

24

Line height: 32

Sample

6. Choose the OK button.

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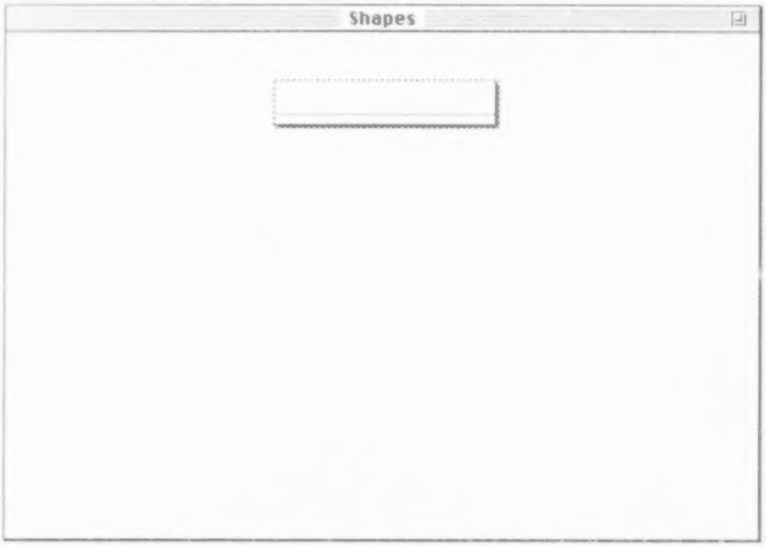
Resize and Reposition This Field to the Top Center of the Background

1. Move the cursor to the bottom right corner of the field.

2. Press the mouse button.
   Notice that the borders of the field become solid lines.

3. Drag the bottom right corner of the field up to create the desired size and shape (see picture below).

4. To reposition the field, click inside the resized field and drag it to the top center of the card (see picture below). Release the mouse button.



5. Leave the background. From the Edit menu, choose Background.

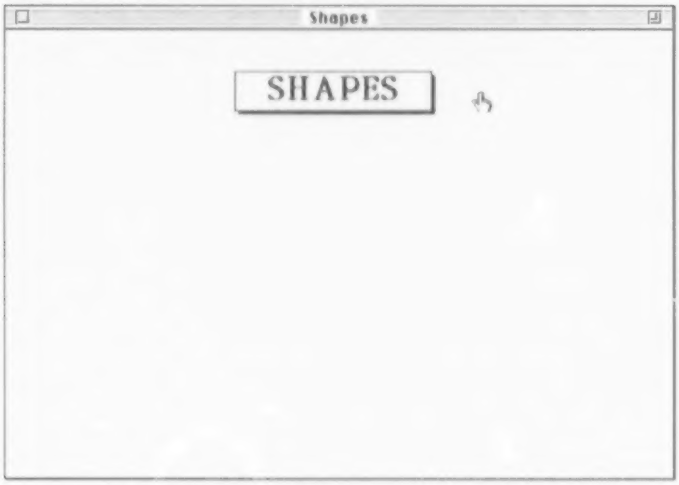
Type Text in Existing Background Field

After you have made the background, you are ready to develop your stack by creating cards which contain the material to be presented.

1. Choose the browse tool 👆 from the tools palette.
   The browse tool is the icon of the hand located in the upper left corner of the tools palette.

2. Click in the text field named "Title" and press the Caps lock key.
   After you click in the text field named Title, you should see the blinking vertical cursor in the text box.

3. Type *SHAPES*.



SHAPES

4. Press the Caps lock key to return to lower case letters.

Give the First Card a Name

1. From the Objects menu, choose Card Info.

2. Type *Question*.

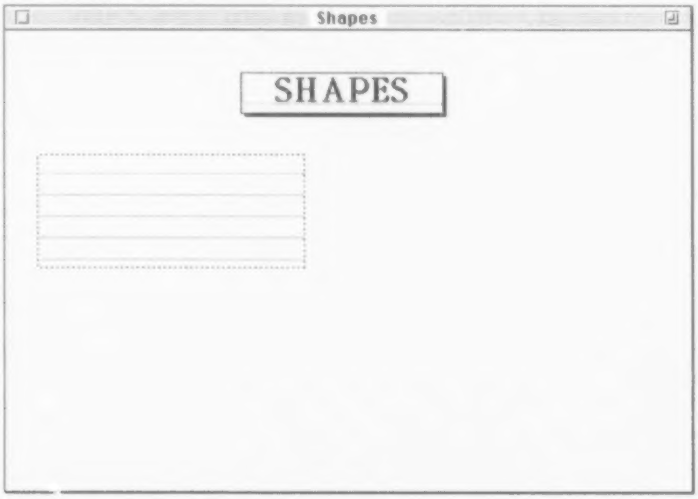
3. Choose the OK button.

Create a New Field on the First Card

In this section, you will create a new text field to write the instructions (which will be read by the student or read by a teacher to the student, depending on the reading ability of the student).

1. From the Objects menu, choose New Field.

2. Reposition the field by clicking inside the field and then dragging it to the left side of the card.



SHAPES

3. Double-click inside the new field to access the field attributes dialog box.

4. Give the field a name by typing *Instructions*.

5. From the Style options, choose Shadow.

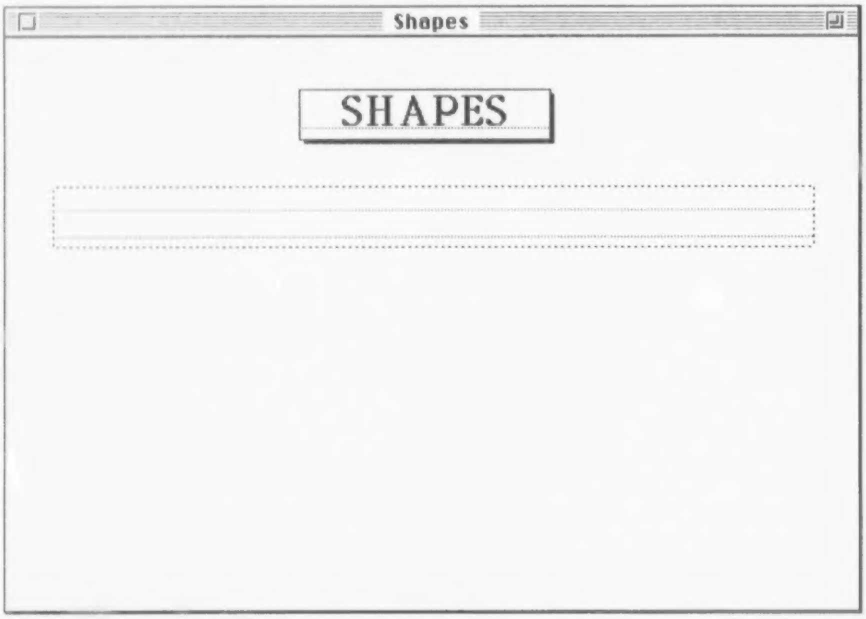
6. Choose the Font button to access the font dialog box. From the list of fonts, choose New York. From the list of font sizes, choose 14 pt.

7. Choose the OK button.

8. Resize the field. Move the cursor to the bottom right corner of the field.

9. Press the mouse button.

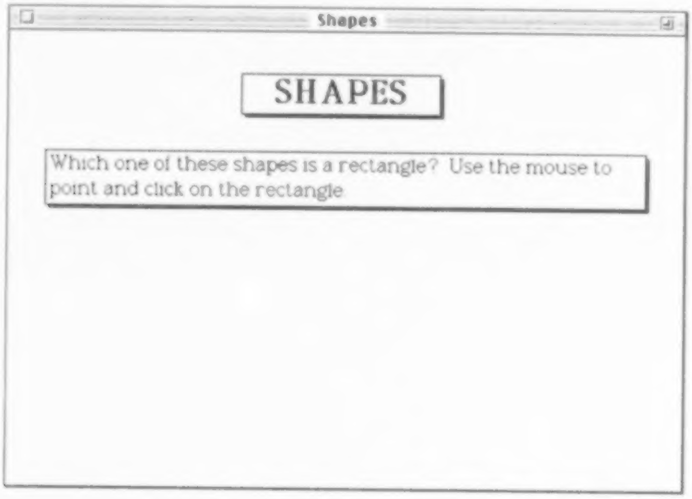
10. Drag the bottom right corner of the field up and to the right to create a field which is two lines in width and extends to about a ½ inch from the right border of the card.



11. Choose the browse tool ☝ from the tools palette.
The browse tool is the icon of the hand located in the upper left corner of the tools palette.

12. Click in the field named "Instructions."
After you click in the field named Instructions, you should see the blinking vertical cursor in the upper left corner of the text box.

13. Type *Which one of these shapes is a rectangle? Use the mouse to point and click on the rectangle.*



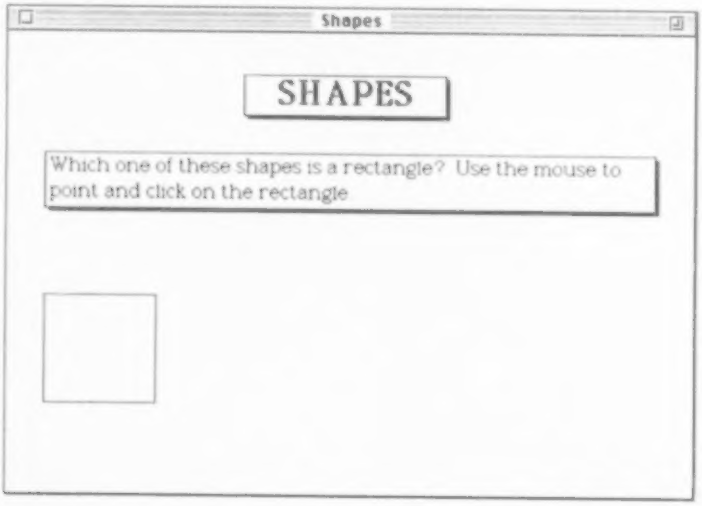
SHAPES

Which one of these shapes is a rectangle? Use the mouse to point and click on the rectangle

Create Three Graphic Shapes

1. Choose the box tool ☐ from the tools palette.
   The rectangle tool is the icon of a small rectangle located just to the right of the spray paint can icon.

2. Create a square on the left side of the card. Position the cursor at the top left of the area where you want the figure to appear. Click and drag to the bottom right until you draw the shape of a square.
   If you make a mistake and want to redraw the square, choose the Erase tool in the tools palette. Press the mouse while you erase over the line. Then choose the rectangle tool again and draw the square.

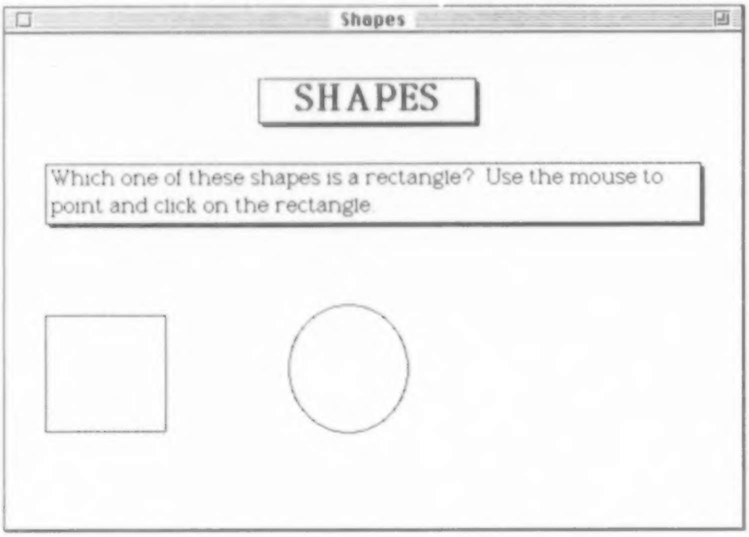


SHAPES

Which one of these shapes is a rectangle? Use the mouse to point and click on the rectangle

3. Choose the oval tool ◯ from the tools palette.
   The oval tool is the icon of a small oval located just to the right of the paint bucket icon.

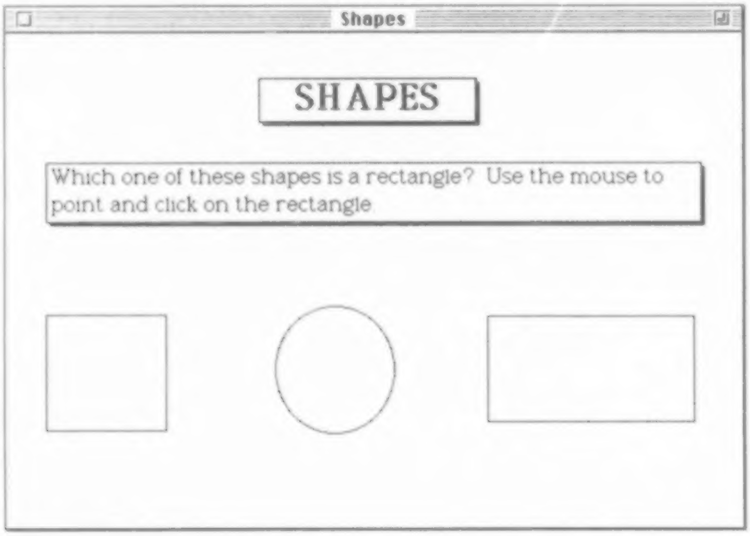
4. Create a circle in the middle of the card. Position the cursor at the top left of the area where you want the figure to appear. Click and drag to the bottom right until you draw the shape of a circle.



Which one of these shapes is a rectangle? Use the mouse to point and click on the rectangle.

5. Choose the box tool ☐ from the tools palette.

6. Create a rectangle on the right side of the card. Position the cursor at the top left of the area where you want the figure to appear. Click and drag to the bottom right until you draw the shape of a rectangle.



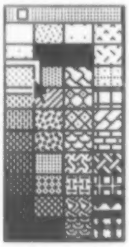
Which one of these shapes is a rectangle? Use the mouse to point and click on the rectangle.

Fill in the Shapes with a Pattern

1. Choose the paint bucket tool from the tools palette.

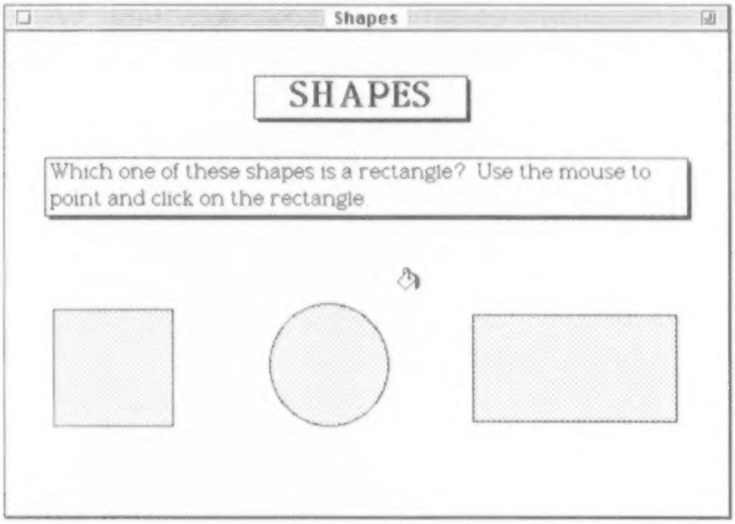
2. Double-click the paint bucket tool.
   When you double-click, the pattern options box appears.

3. Select pattern number 3 as shown in the following diagram.



4. Position the bucket paint tool *inside* the square shape and click the mouse to fill the square with the pattern. If needed, press the Command key (the key with the open apple on it) and while keeping the command key pressed down, press the "Z" key to undo your work and try again.

5. Position the bucket paint tool *inside* the circle and rectangle shape and click the mouse to fill these shapes with the pattern.



SHAPES

Which one of these shapes is a rectangle? Use the mouse to point and click on the rectangle

6. Close the pattern box by clicking in the small box in the left, top corner.

7. Choose the browse tool in the tools palette.

Create a New Card

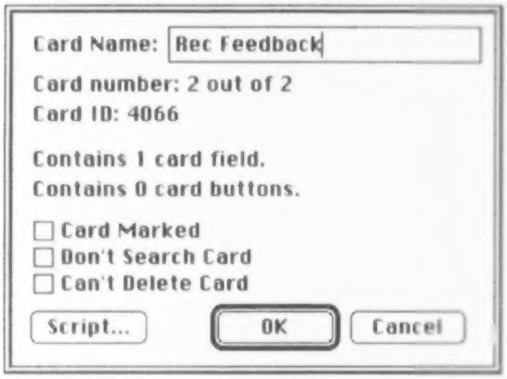
Now that you have created the first card which asks the student to use the mouse to point and then click on the rectangle shape, you need to provide feedback to the student as to whether they clicked on the correct shape or not. You will now create a new card which gives feedback to the student if they clicked on the rectangle.

1. From the Edit menu, choose Copy Card.

2. From the Edit menu, choose Paste Card.
   This card is now card #2 in your stack.

3. Name the new card. From the Objects menu, choose Card Info.

4. Type *Rec Feedback.*
When you open the Card Info dialog box, the Card number should read "2 out of 2."



Card Name: Rec Feedback

Card number: 2 out of 2

Card ID: 4066

Contains 1 card field.

Contains 0 card buttons.

☐ Card Marked
☐ Don't Search Card
☐ Can't Delete Card

Script...
OK
Cancel

5. Choose the OK button to close the dialog box.

Add Feedback to the Rec Feedback Card

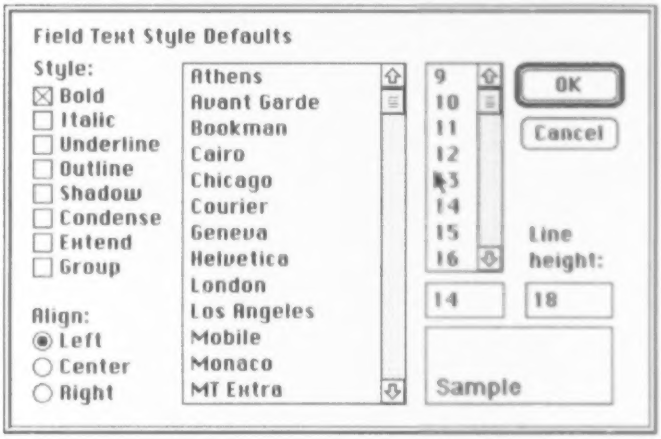
1. From the Objects menu, choose New Field.

2. Double-click inside the new field to access the field attributes dialog box.

3. Give the field a name by typing *Feedback.*

4. From the Style options, choose Transparent.

5. Choose the Font button to access the font dialog box. From the list of fonts, choose Helvetica. From the list of font sizes, choose 14 pt. From the Style option, choose Bold so there is an "X" in the box next to the word Bold.



Field Text Style Defaults

Style:
☒ Bold
☐ Italic
☐ Underline
☐ Outline
☐ Shadow
☐ Condense
☐ Extend
☐ Group

Align:
● Left
○ Center
○ Right

Size: 14

Line height: 18

Athens
Avant Garde
Bookman
Cairo
Chicago
Courier
Geneva
Helvetica
London
Los Angeles
Mobile
Monaco
MT Extra
9
10
11
12
13
14
15
16
OK
Cancel
Sample

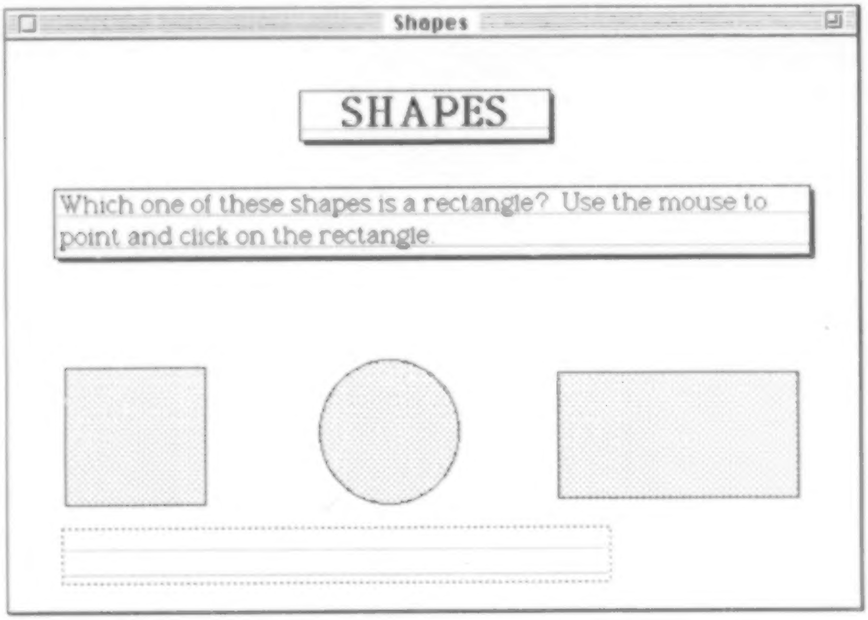
6. Choose the OK button.

7. Resize the field. Move the cursor to the bottom right corner of the field.

8. Press the mouse button.

9. Drag the bottom right corner of the field up and to the right to create a field which is a little over two lines in length and extends to about a $\frac{1}{2}$ inch from the right border of the card.

10. Reposition the field by clicking inside the field and then dragging it to the left side of the card so the left side of the field is under the square shape.



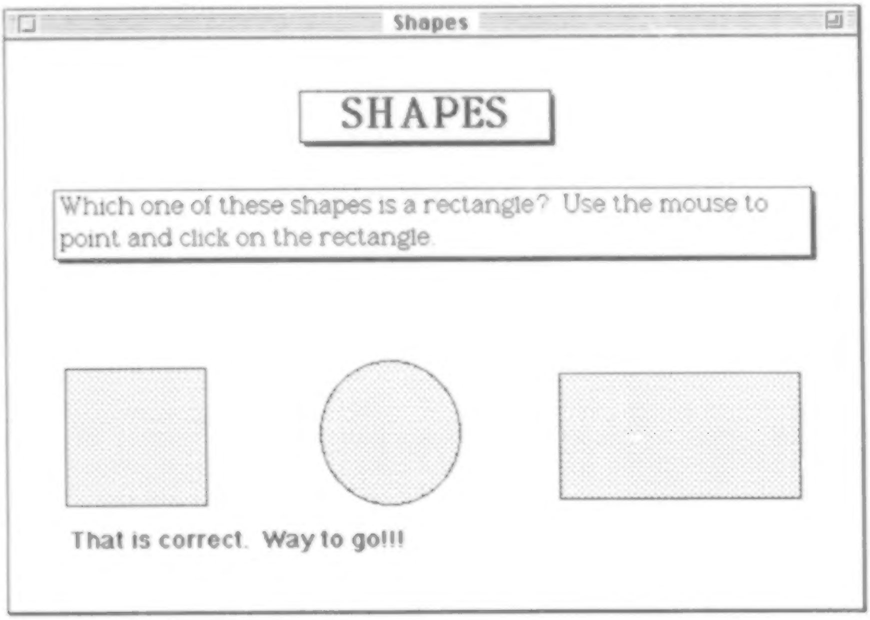
SHAPES

Which one of these shapes is a rectangle? Use the mouse to point and click on the rectangle.

11. Choose the browse tool ☝ from the tools palette.

12. Click in the field you just repositioned named "Rec Feedback."
After you click in the field, you should see the blinking vertical cursor in the upper left corner of the text box, but you will not see the actual outline of the text box.

13. Type *That is correct. Way to go!!!*



SHAPES

Which one of these shapes is a rectangle? Use the mouse to point and click on the rectangle.

That is correct. Way to go!!!

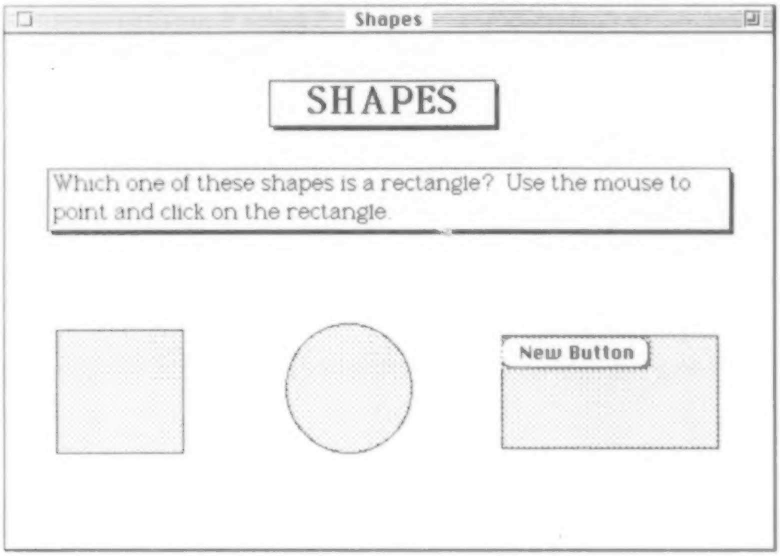
Linking Cards with Buttons

Now that you have created the feedback card for the correct response, you need to create a button to link the first card named "Question" with the second card named "Rec Feedback."

1. Move to Card #1, entitled "Question." From the Go menu, choose First.

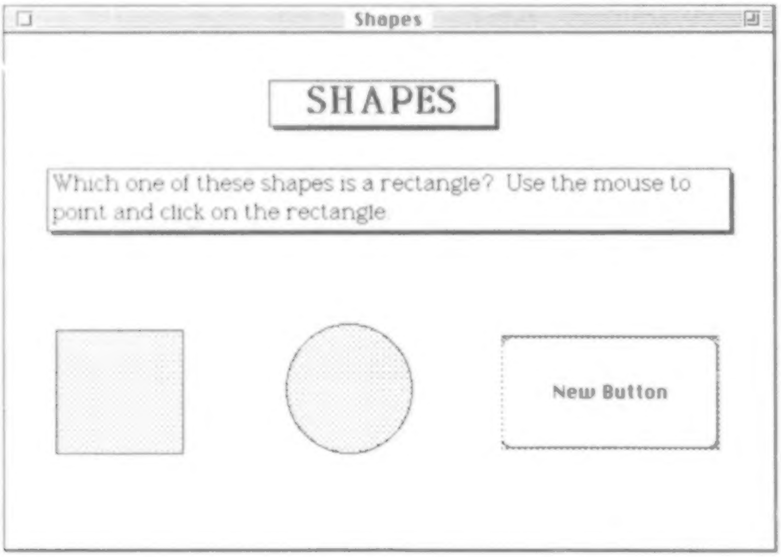
2. Create a button. From the Objects menu, choose New Button.

3. Reposition this button so that it is on top of the rectangle shape. Drag this button to the top, inside left corner of the rectangle.



Which one of these shapes is a rectangle? Use the mouse to point and click on the rectangle.

4. Resize the button to cover the entire rectangle shape. Click on the bottom right corner of this button and drag until it covers the entire rectangle.



Which one of these shapes is a rectangle? Use the mouse to point and click on the rectangle

5. Reset the button attributes. Double-click inside the button to access the button attributes.

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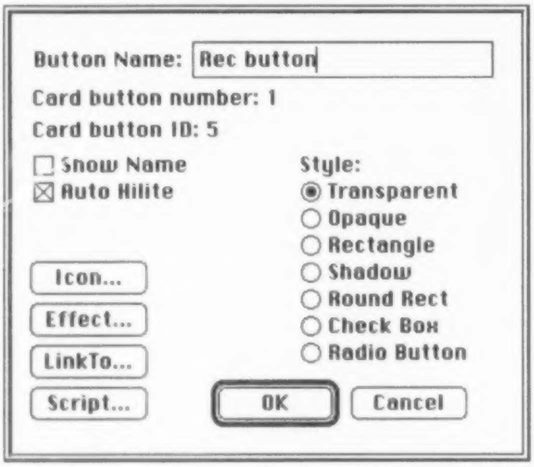
6. Name the button. Type *Rec button.*

7. Click on Show Name option to remove the "X" in the box.

8. Click in the Auto Hilite box to place an "X" in the box.
Activating this feature causes the button to inverse when it is clicked by the user and gives a visual cue that an action has occurred.

9. From the Style options, choose Transparent.

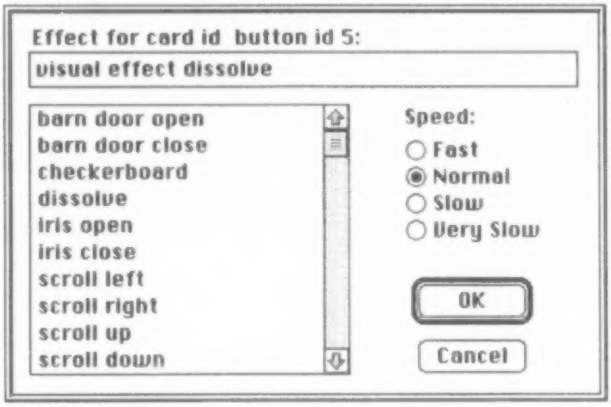


Button Name: Rec button
Card button number: 1
Card button ID: 5
☐ Show Name
☒ Auto Hilite
Style:
● Transparent
○ Opaque
○ Rectangle
○ Shadow
○ Round Rect
○ Check Box
○ Radio Button

Icon...
Effect...
LinkTo...
Script...
OK
Cancel

10. Choose the Effect button to access the Effect dialog box.

11. From the list of possible effects, choose dissolve. Make sure Normal is selected under the Speed options.



Effect for card id button id 5:
visual effect dissolve
Speed:
○ Fast
● Normal
○ Slow
○ Very Slow

barn door open
barn door close
checkerboard
dissolve
iris open
iris close
scroll left
scroll right
scroll up
scroll down
OK
Cancel

12. Choose the OK button.

13. Link this card to the second card (called "Rec Feedback"). Double-click inside the same button to access the attributes.

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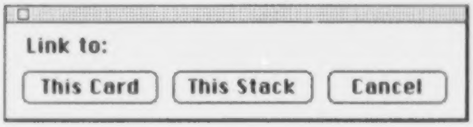
14. Choose the Link To button.
    A Link dialog box will appear. You now want to move to the card you want to link. In this case, move to the second card.



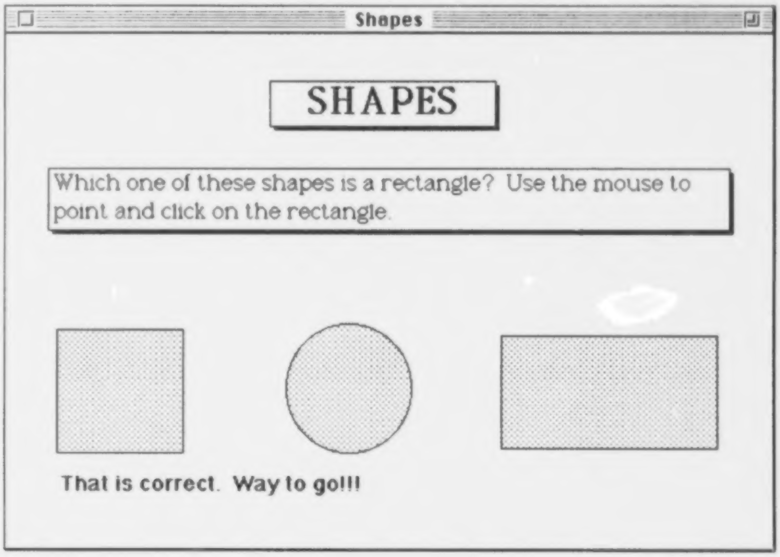
15. From the Go menu, choose Next.

16. Choose the This Card button in the Link dialog box to link to the current card.
    Hypercard will automatically link these cards.

Test the Link

1. Choose the browse tool in the tools palette.

2. Click in the rectangle shape on the card.
   If the link was done correctly, you will see the second card (titled "Rec Feedback") and see the feedback statement you wrote at the bottom of the card.



Which one of these shapes is a rectangle? Use the mouse to point and click on the rectangle.

That is correct. Way to go!!!

Create a Third Card for Feedback if the Learner Selects the Circle Shape

If the student clicks on the circle shape, you should have some feedback in your stack informing the student that his or her selection was incorrect. Create a third card and link it to a button covering the circle shape.

1. From the Edit menu, choose Copy Card.
   You have now made a copy of Card #2.

2. From the Edit menu, choose Paste Card.
   This card is now Card #3 in your stack.

3. Name the new card. From the Objects menu, choose Card Info.

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4. Type *Circle Feedback.*
   When you open the Card Info dialog box, the Card number should read "3 out of 3."

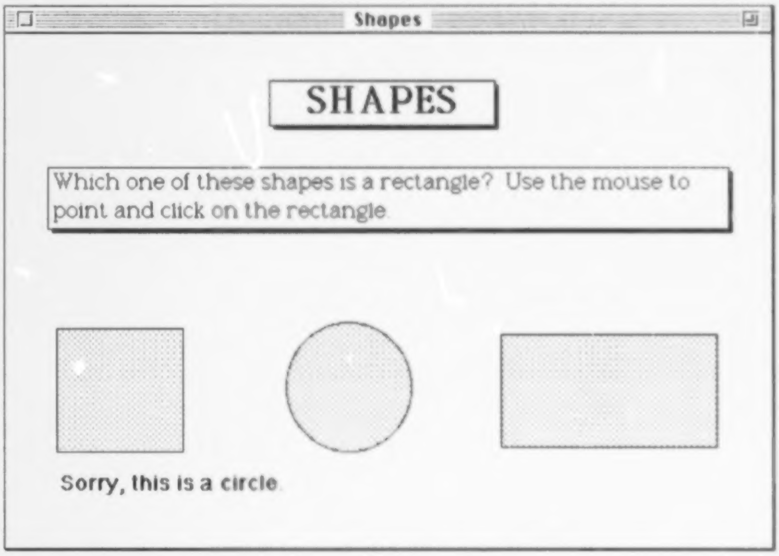
5. Choose the OK button to close the dialog box.

Add Feedback to the Circle Feedback Card

1. Choose the browse tool in the tools palette, if it isn't already selected.

2. Highlight the text in the feedback field which reads "That is correct. Way to go!!!"

3. Type *Sorry, this is a circle.*



SHAPES

Which one of these shapes is a rectangle? Use the mouse to point and click on the rectangle.

Sorry, this is a circle.

Link the Third Card with the First Card

1. Move to Card #1, entitled "Question." From the Go menu, choose First.

2. Create a new button. From the Objects menu, choose New Button.

3. Reposition this button so that it is on top of the circle shape. Drag this button to the top of the circle.

4. Resize the button to cover the entire circle shape. Click on the bottom right corner of this button and drag until it covers the entire circle.

5. Reset the button attributes. Double-click inside the button to access the button attributes.

6. Name the button. Type *Circle button.*

7. Click on Show Name option to remove the "X" in the box.

8. Click in the Auto Hilite box to place an "X" in the box.

9. From the Style options, choose Transparent.

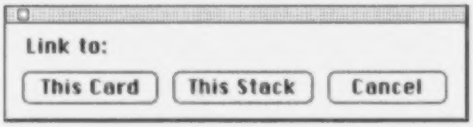
10. Choose the Effect button to access the Effects dialog box.

11. From the list of possible effects, choose dissolve. Make sure Normal is selected under the Speed options.

12. Choose the OK button.

13. Link this button to the third card (called "Circle Feedback"). Double-click inside the same button to access the attributes.

14. Choose the Link To button.
A Link dialog box will appear. You now want to move to the card you want to link. In this case, move to the third card.



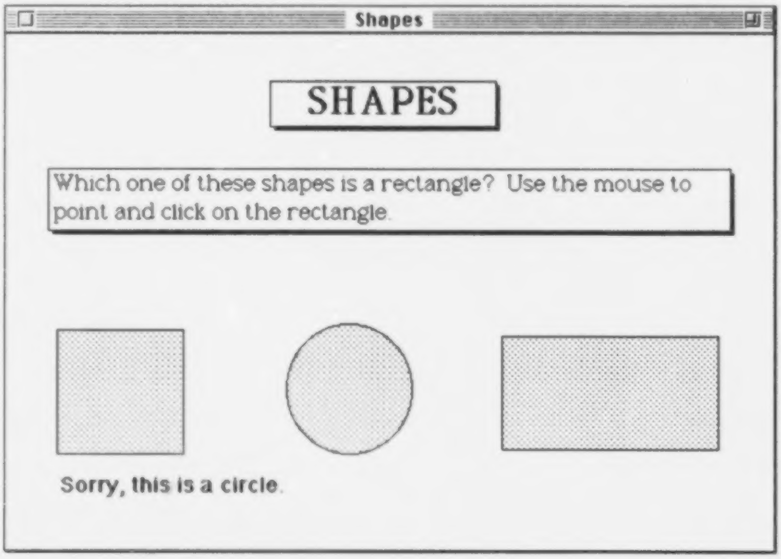
15. From the Go menu, choose Last.
This takes you to the last card in the stack, which is the third card for this stack.

16. Choose the This Card button in the Link dialog box to link to the current card.
Hypercard will automatically link these cards.

Test the Link with the Third Card

1. Choose the browse tool in the tools palette.

2. Click in the circle shape on the card.
If the link was done correctly, you should move to the third card (titled "Circle Feedback") and see the feedback statement you wrote at the bottom of the card.



SHAPES

Which one of these shapes is a rectangle? Use the mouse to point and click on the rectangle.

Sorry, this is a circle.

Create a Fourth Card for Feedback if the Learner Selects the Square Shape

If the student clicks on the square shape, you should have some feedback in your stack informing the student that his or her selection was incorrect. Use the same procedures as specified in the previous sections of this lesson to create a fourth card and link it to a button covering the square shape.

This section does not provide any step-by-step instructions. The purpose of this section of the lesson is to give you an opportunity to apply what you have learned in the previous sections. First, you should create a new card by copying one of the other feedback cards. Then, revise the feedback text on this card in the event that the student selects the square shape. Create a new button on the first card which covers the square shape. Link this new button with the card you just created for feedback on the square shape. Finally, test the link to make sure the link worked properly.

If you make an error creating the new button to cover the square shape and want to start over, from the Go menu, choose First card, and try it again.

Test the Entire Stack

Using the Go menu to go to the first card, test out each of the three shapes to make sure the buttons and links work properly. If there are any problems, repeat some of the previous steps to determine the problem.

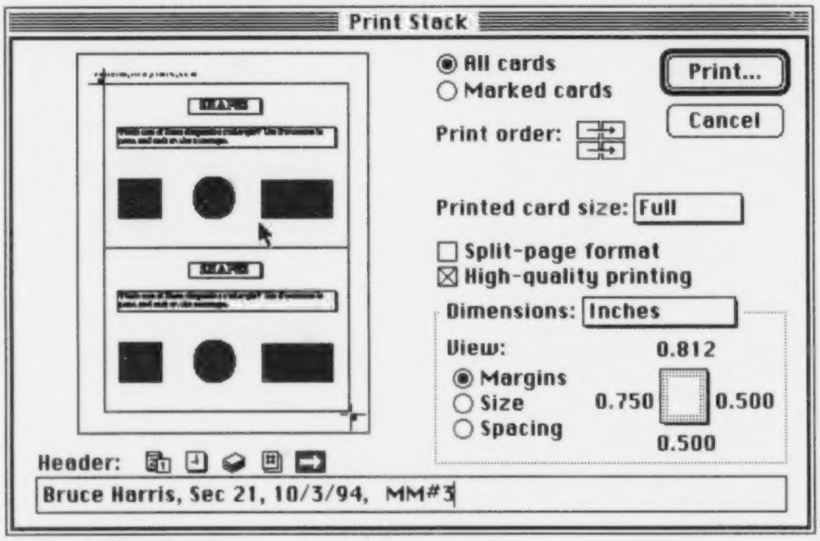
This lesson illustrates how a teacher could use an authoring system like Hypercard to develop his or her own computer-based instruction, without having to learn a programming language.

Print the Four Cards in Your Stack

To receive a grade for this lesson, you will need to print out the four cards you created in this stack, staple these two pages, and submit them by the due date.

1. From the File menu, choose Print Stack.

2. In the Print dialog box, type in the header box your name, section, date, and MM #3.



● All cards
○ Marked cards

Printed card size: Full

☐ Split-page format
☒ High-quality printing

Dimensions: Inches

View:
● Margins
○ Size
○ Spacing

0.812
0.750
0.500
0.500

Header: Bruce Harris, Sec 21, 10/3/94, MM#3

3. Choose the Print button.
   Hypercard prints two cards on a page. A sample printout of what the completed lesson (two pages) should look like is on the following two pages.

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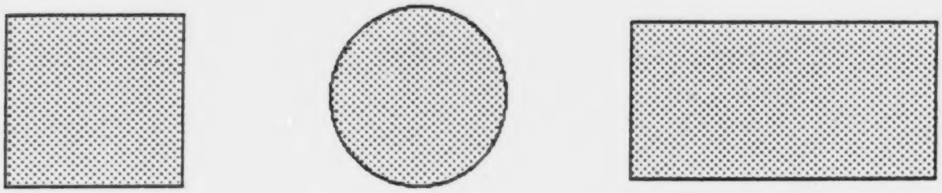
Bruce Harris, Sec 21, 10/3/94, MM#3

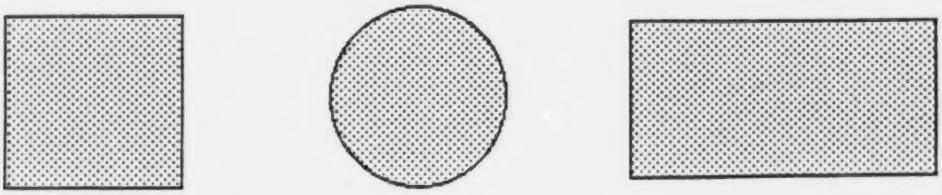
SHAPES

Which one of these shapes is a rectangle? Use the mouse to point and click on the rectangle.



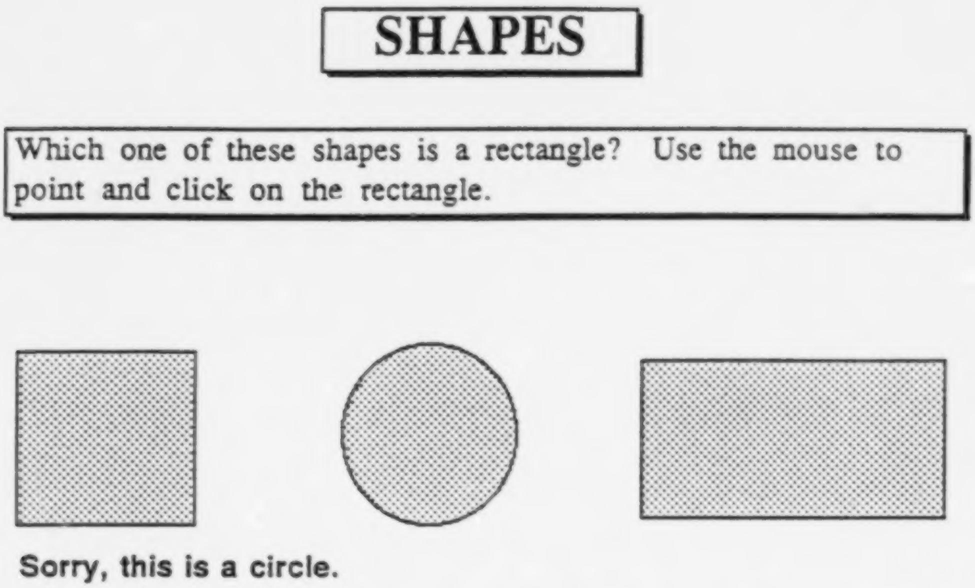
SHAPES

Which one of these shapes is a rectangle? Use the mouse to point and click on the rectangle.



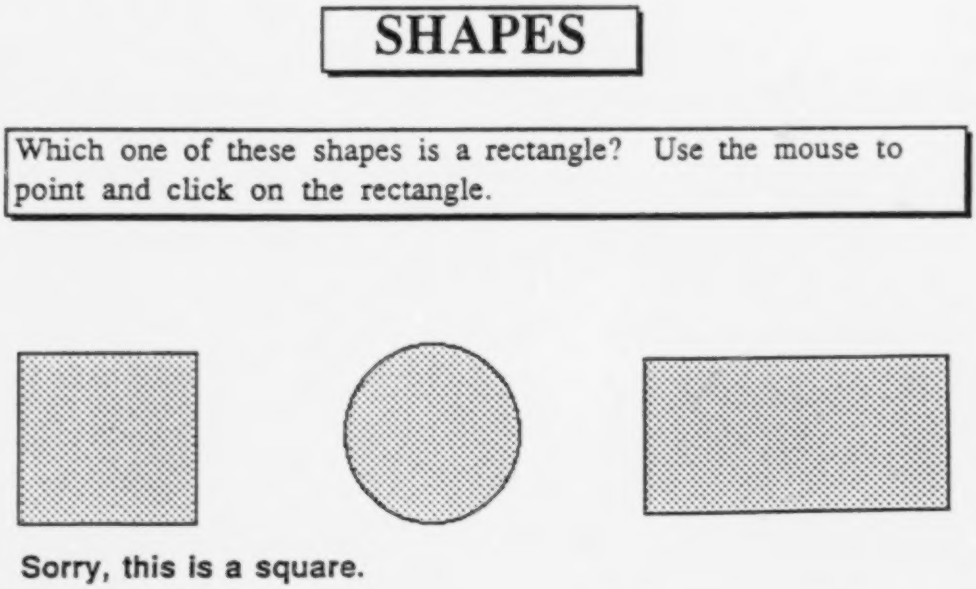
That is correct. Way to go!!!

Bruce Harris, Sec 21, 10/3/94, MM#3


SHAPES

Which one of these shapes is a rectangle? Use the mouse to point and click on the rectangle.

Sorry, this is a circle.


SHAPES

Which one of these shapes is a rectangle? Use the mouse to point and click on the rectangle.

Sorry, this is a square.

College of Education and Human Services
Western Illinois University
Macomb, Illinois

1996

Supported by
The Governor's Ameritech EdTech Grant

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Instructional Video Production for the K-12 Classroom

Dr. Chris Lantz

Ameritech

Western Illinois University

Tools for Teaching with Technology

The WIU Approach to Integrating Technology into Teacher Education

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Instructional Video Production for the K-12 Classroom

Dr. Chris Lantz, Department of Instructional Technology and Telecommunications

Module Context

Course Description

ITT 233 - Production of Instructional Materials. This course introduces the planning and production of materials for presentations in training, instruction, and public relations, including graphic, computer, and video applications.

Course Prerequisites

None

Additional Courses Where Module Could Potentially Fit

Video production can easily fit into many courses. However, the skill development focus of this module requires significant time, and so fits best into a technology skills course such as ITT 233.

Other Relevant Student Characteristics

Teacher education students

Module Focus

Title of the Module

Instructional Video Production for the K-12 Classroom

Content Area of the Module

Video production and integration of video into instruction

Description of the Module

Instruction is included on the preproduction, production, and postproduction of educational videos. The instruction will culminate in students producing an educational video, which relates to specific instructional objectives.

Ameritech Student Outcome(s) Supported

- To evaluate and use communication technologies along with computers and multimedia to support the instructional process.
- To identify resources for a wide array of academic subjects for elementary and secondary grade levels.
- To design and develop learning activities that integrate computing and communications technologies for students at different achievement levels, including gifted and those with disabilities, and for diverse cultural student populations.
- To design and develop activities that can be used in the classroom to integrate video technology for students at various achievement levels and for diverse cultural populations.
- To identify or design creative uses of telecommunications which develop student skills in problem solving, decision making, data collection, self-paced instruction, research, and communications.

Specific Module Objectives

- To practice preproduction planning:
    - identify instructional goals
    - create the content and script
    - organize a sequence of shots
    - integrate the roles of group members
- To master skills in operating a camcorder and VCR.
- To practice employing good video camera movement and compositional techniques to solve visual problems in videotaping a sequence of scenes.
- To practice VCR-to-VCR, in-line, or digital editing to assemble a series of scenes which effectively communicate a preplanned instructional message.
- To develop skills in effective collaborative teamwork.
- To learn about the role of an instructor in supporting team projects.

- To learn ways in which discussion and debate can be encouraged after presentation of a content-based educational video.

Technology Competencies Developed Through the Module

Awareness

In this assignment, students will become aware of how student video production teams function under the guidance of a teacher, and how a content-based videotape can be used to stimulate class discussion and debate.

Hands-On Experience and Skills Development

Since students take on roles in the video production project, they become aware of all roles and responsibilities of the team members, but acquire hands-on experience and more in-depth skill development opportunities within their own role (see Supplementary Materials, Video Production Team). For example, all students will have opportunities to practice using a camcorder, but the producer will use it the most as her or his primary duty.

Module Contents

Students complete several readings and observe demonstrations of various examples of video preproduction, production, and editing activities. Production teams practice their new skills while producing and presenting an original video.

Teaching Strategies

The instructor presents examples of preplanning used for a specific video shown in class. Camera techniques are demonstrated by the instructor and videos are shown which demonstrate effective camera work. Video editing is demonstrated to facilitate modeling by the entire class. This learning is reinforced through supervised lab time. Editing is supervised by the instructor and the ITT multimedia lab technician.

Learning Strategies

Students work in production groups of four. Work in these groups is divided into the functions of the screenwriter, director, producer/videographer, and editor. Project content is suggested to students but, upon consultation with the instructor, each group provides its own ideas or modifies the instructor's suggestions. The role and function of each of the team members is clearly defined (see Supplementary Materials). All members have introductory experience with all four of these roles, although they specialize in only one for the production of the student video. The introductory experiences are designed to give students an idea as to which role they would like to play in their team's video production. Finally, students will introduce their video to the class, provide concluding remarks, and suggest areas of discussion brought up by their work.

Ways Students Will Demonstrate Competency/ Assessment

Technical and Design Basics

- Identify visual design principles in an assigned viewing of video clips.
- Shoot a series of scenes detailed in a shot type and camera movement shooting list assignment.
- Demonstrate understanding of one type of video editing.

Preproduction

- Complete initial planning activities.
- Complete video script and storyboards.
- Complete an equipment list, a prop list, and shot list for the video.

Production/Post-Production

- Complete team-assigned production duties.
- Participate in other team member's production activities via three production meetings.
- Complete all videotaping and editing.

Class Presentation

- Participate in the final presentation of the video to class, in terms of introductory comments and stimulating discussion.

Ways Students Will Learn How To Use Technology in Their Classrooms (To Improve Transfer)

Students can directly teach their video production skills to their own students. They can also use their short Quicktime video clip and longer group production for direct instruction. Additionally, the knowledge of visual literacy principles transfers to the creation of other types of instructional materials. Discussion of these matters in class will enhance the students' awareness and motivation for employing their new skills in the K-12 environment.

Module Implementation

Print Materials Needed

- Example of script and storyboard for instructional video shown as introductory example in class
- Instructional video applications reading
- Visual design principles in video production reading
- Camera movement diagrams
- Camcorder operation reading and instructions
- Camera movement exercise, shooting list, and instructions
- Videotape editing reading and worksheet
- Quicktime digital movie reading and exercise instructions
- Hi-8 editor instructions and diagram
- Final project assignment sheet and team member selection agreement
- Production team meeting
- Script assignment sheet for writer
- Shooting list assignment sheet for camera person
- Editing list assignment for video editor
- Presentation of introductory comments and post-video discussion questions

Equipment/Technology Needed

- Video camcorders
- Computers with a video-capture card
- In-line video-editing equipment
- VCRs

Software or Other Electronic Media Needed

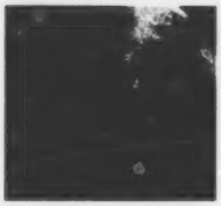
Video capturing and editing software and videotapes

Implementation Recommendations

- Since this module is one-third of a course, student roles need to be preassigned, and structured mini-assignments throughout the module need to be employed to contribute to the efficiency of the group projects.
- Editing choices are given because students vary widely in their prior experience level with camcorders, computers, and visual literacy skills. Groups comprised of students with less experience, or less opportunity to work together in the computer lab, may prefer to do VCR-to-VCR editing. Those with more experience may want to try the in-line editing. Advanced students may want to explore digital editing.
- It is important to discuss how the students might adapt their experience in video production to the K-12 classroom, using some of the available teacher resources focused on the subject.

Supplementary Materials

Shot Types



Extreme Close-Up

Close-Up

Medium Close-Up

Medium

Long

Video Camera Movements

Shot A
- Medium shot
- Subject walks
- Pan with the subject
- Sun is behind camera

- Subject stops and faces the camera

Shot B
- Extreme close-up
- Subject shaded with bright background

- Zoom out to a medium close-up

Shot C
- Long shot
- Subject enters scene
- Subject shaded and rim lit

- Subject stops

- Zoom to a medium shot

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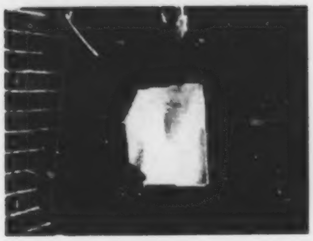
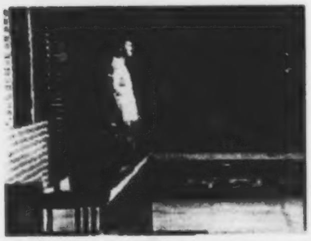


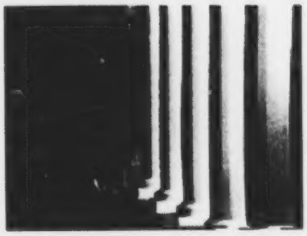
Shot D

- Medium close-up of a book
- Subject shaded

- Tilt to face

- Pan camera to someone walking





Shot E

- Medium shot
- Subject enters scene and walks toward camera
- Subject shaded

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Instructional Video and the Quicktime Digital Formats

To many current educational computer users, Quicktime is something already in your computer waiting to be used. Teachers and instructional media producers are ideal consumers for this new technology. This is especially true when we consider long-standing and increasing instructional needs for more and better quality visual illustrations.

Quicktime allows moving images and sounds to play in almost any document or application on the Apple Macintosh computer. Quicktime movie files can be cut and pasted, imported, and edited just as in any other graphics or text Macintosh file format.

Quicktime technology has been widely licensed to software developers, and many conventional programs such as word processors, databases, and spreadsheets are now Quicktime compatible. Existing or published Quicktime clips are available within multimedia applications such as CD-ROM encyclopedias or movie resource disks. Quicktime movie files can be created by inputting or digitizing live video or videotape.

Digitizing is the conversion of video scenes on the videotape format into a file within computer memory represented by an icon in the Macintosh environment. This digitizing is accomplished by a computer add-on hardware board and a Quicktime program. A conventional videotape player or camcorder is directly connected to this board which resides within the computer. The digitizing board, in conjunction with the software in the computer, converts the videotaped visual and audio information directly into computer memory. After the video information is digitized, the information which makes up the movie can be easily edited, and a great number of special effect possibilities can be utilized in a presentation. Quicktime movies are assembled in the computer and used in computer presentations, in multimedia software programs, or they can stand on their own as a final movie file. Final Quicktime movies are usually distributed to viewers in CD-ROM format and are usually not output back to the videotape format, although this is possible.

Desktop video is a term which is used to describe a broad spectrum of uses that the personal computer has been applied to in instructional video production. It is useful to make distinctions between Quicktime digital video and computer-aided conventional videotape editing. The final product of Quicktime movie editing is a digital computer file. The output of desktop computer-assisted systems is conventional videotape.

One example of computer-assisted conventional videotape editing is the Commodore Amiga computer-based Videotoaster. The Videotoaster uses the computer to direct the editing functions between two or more videotape recorders. The Videotoaster can also produce elaborate transitions and other effects, but these are destined for output to tape in short segments and not in a final digital file, as in Quicktime.

Computer-assisted videotape editing can be the best of both worlds where longer productions and higher resolution are the priority. In the near future, once the memory and speed restraints of personal computers are less of a factor, Quicktime will offer significant advantages over computer-assisted video for all applications. This is due to the fact that digital files are randomly accessible at any point; have far greater potential for special effects; and do not incur a loss of quality, as does videotape when it is duplicated.

Use of Video in Instruction

One major approach for the use of video in instruction is the entertainment format. The video in this approach is usually longer and has higher cost productions due to the continuous storyline. The Hollywood storyline is not ideal for most information-oriented instructional goals because it is continuous. A two-hour story is not efficient in transmitting information because the attention span of viewers will wander over this period. Viewers are also familiar with the format of entertainment programming and will not expect to be required to concentrate to the extent necessary to retain many instructional goals. The best use of the Hollywood style is for a general overview of material that will motivate students to learn new material or that will present instructional goals which seek to influence students' emotions or attitudes. These longer productions are best suited to traditional motion picture and linear videotape-based production because of their length.

The narrative, story-based structure of entertainment programming is often not effective in instruction because it is designed to be self-supporting. Scenes are not open-ended in a way that allows room for comment and discussion. What are often disadvantages of the entertainment format in factual or cognitive learning is of advantage when objectives are affective or emotional in nature.

Using the already built-in visual competencies of viewers to follow a story is sometimes useful in structuring instructional objectives. Adopting the format, storyline, or character types that are popular in television for an instructional video are examples of facilitating instruction by using knowledge and attitudes that students already possess. More often though, the way we perceive entertainment programming differs from that designed to impart information. Specifically, entertainment programming contains scenes and story development which are transparent.

Continuity in entertainment develops in a continuous and flowing manner. Visuals for information, on the other hand, often purposely break visual information down into steps, modules, or instructional units so they can be easily remembered. Instructional units are designed for better comprehension. The level of concentration and visual literacy required of educational viewers is higher than that of home entertainment viewers.

The use of short clips which are designed to support the transmission of information to students is often a more effective technique than the Hollywood format. These video segments are not designed to be self-contained and used without clarification. This clarification can be provided by the instructor, narration on the soundtrack of the film, a workbook, or graphics and text provided by a computer multimedia application. Video clips can be used as the focal point of instruction, directing attention to the most important concepts of a lecture or demonstrating sequential steps in a programmed instructional format.

Video can also be used as more of a supporting function in instruction than its main structure. The script, in the case of short video clips, takes the form of instructional objectives. It is often suggested that instructors utilizing structured video programming prepare viewers to use the video clips. This is accomplished by describing how to take notes and directing attention during the program by stopping the video and provoking discussion.

The current resolution and duration restraints of Quicktime described in the next section do not negatively impact many educational video applications. Educational video is often produced in short clips which are designed to be included in instruction at a particular point. Shorter clips are an ideal application of the Quicktime format. Video Quicktime clips are also often supplemented by titles and other graphic elements as part of interactive instruction or presentation graphics. The small size and low resolution of the standard Quicktime format is often not a problem in these educational applications because the clips seldom take up the entire space on the computer screen. Quicktime does have some disadvantages that are detrimental for longer, Hollywood-style productions, but they are not a factor for many instructional applications.

Individualized instruction is a common application of the Quicktime format. School media centers have been involved in the production of individualized instruction for many years. In the past, individualized instruction programming involved film clips which were accessible to students with the aid of film loop projectors or still images via the venerable filmstrip format. Videodiscs became available in the mid 1980s and student selection of video clips within instruction was assisted via computer. The use of video clips in individualized instruction went one step further when Quicktime was announced. Quicktime clips were initially integrated into computer-based presentations and then later into interactive software.

Computer presentations are often produced for display over video projection systems in large lecture hall classrooms. Many universities have switched from traditional photographic presentations to computer-based ones for many applications. Although there are still some distinct resolution advantages to the 35mm slide show or the 16mm movie, the convenience and speed offered by digital images are often crucial because of time restrictions. Several colleges and universities, as well as high schools, have constructed permanent electronic classrooms for teachers to display computer-based presentations. Another approach is the creation of mobile carts which contain computer and video projectors which faculty can use in a traditional class setting to project visuals onto a standard screen.

Limitations of Quicktime

A pixel is the smallest picture unit or element from which images are made on both computer or television screens. The size of the standard Quicktime screen is 160x120 pixels versus the resolution of television which is 640x420. As a result, the pixel area defining the Quicktime picture is significantly lower in resolution. Another important disadvantage of the Quicktime format is that it requires large quantities of computer memory and disk space. This is because moving pictures display 15-30 still pictures per second to achieve the illusion of motion. Although almost any current Macintosh computer will run basic Quicktime movies, the more expensive models, which feature greater memory and computing speeds, are required for editing and manipulating scenes over one minute.

The quality of the image is further impacted by software compression. Compression works by analyzing the picture and subtracting resolution from the image where little detail exists. Compression cannot be detected if used to a small degree, but if video is greatly compressed, large blocks or pixels which make up the image become visible. Even when the size and resolution of the video image is lowered, only a few minutes of video will fit on the highest capacity hard disk drives. Advances in digital storage technology have improved this situation through the availability of writable optical disc formats. Recently, the Compact Disc Interactive format (CD-I) has been updated to read entire two-hour movies in compressed format.

A high degree of compression and decompression (CODEC) of digital picture files has made the Quicktime format possible. This CODEC technology has been applied in the transmission of images for distance education applications over standard phone lines and has made the installation of expensive fiber optic cables unnecessary in many sites. Depending upon what amount is applied, compression can significantly lower the resolution we expect to see on television.

One of the main limitations of Quicktime is the speed at which picture information can be compressed and decompressed. Compression is completed by the Quicktime software as a movie is captured into the computer and when a movie is played on the computer.

When playing a Quicktime movie, one frame at a time must be decompressed for viewing. This decompression on-the-fly requires a fast and memory-intensive computer to maintain a normal frame rate that does not flicker on the screen like a 1920s movie. One way to remove these restraints is to use a piece of hardware which is dedicated to CODEC. These boards allow movies to be created and viewed at much higher resolutions than the current software-compressed Quicktime. Desktop video systems that use compression boards or hardware add-on dedicated to Quicktime compression are now common. This has made full television-resolution images possible.

Advantages of Quicktime

Desktop digital video has had a good start with Apple's introduction of the Quicktime file format. In regards to anticipated improvements in memory and computer speed, this format was developed with the future in mind.

At the time of Quicktime's introduction, computing speed and memory were both inadequate and very expensive. With the introduction of the Power PC chip-based computers, a new faster native version of Quicktime became available. Increase in speed has eliminated some quality problems present in earlier Quicktime productions such as slow frame rates, dropped frames, and visible compression pixilation.

Another Quicktime innovation is the "navigable" movie, in which the viewer can direct movement of an imaginary camera through a scene. The viewer points an arrow cursor at the movie clip itself, and by clicking and dragging the mouse toward a new direction, the Quicktime program instantly retrieves visual data which corresponds to the new direction. This enables the viewer to scroll around the scene at will.

The special effects possibilities available with digital video are almost endless. Image altering filters, complex transitions between scenes, and multiple superimposition of video and audio tracks, as well as movement of picture elements, are possible even with standard Quicktime editing programs such as Adobe Premiere. With special effects, Quicktime programs such as Videofusion can change intensity over the length of a video clip making visual effects build. With an inexpensive morphing program, metamorphosis between one movie clip and another can be accomplished.

In most Quicktime programs, full control of basic picture quality such as sharpness and color, in addition to soundtrack editing, are possible. These special effects place a great variety of attention-directing methods at the fingertips of the teacher who is producing a video with a limited budget.

Use of Media Attribute Charts

Content should determine what media is provided to assist students in the attainment of objectives. For some courses or curriculum, video is likely to play a crucial role in the attainment of all objectives, but in other situations, it may play an incidental role.

Media attribute charts are a means to match an appropriate delivery method to the content of an objective. Media attributes are descriptions of what particular media can accomplish. These attributes will include features that many different media can accomplish equally well, and some attributes will only be available with a particular medium.

Many different types of photography can provide realistic images, but only digital video can provide sound and motion in addition to random accessibility, no loss of quality when copied, widely flexible computer-generated special effects, and easy incorporation into other computer-based presentation programs.

Digital video would have unique disadvantages as well such as significantly less resolution than standard VHS video, not as smooth motion, and flaws produced by extreme compression. Based on the unique characteristics of the equipment being used, both the positive and negative attributes would vary. If a hardware compression board were used, resolution would be high and motion would be smooth. As a tradeoff, storage space would be at a premium, and the duration of clips would be very limited.

Most available media attribute charts do not contain the newer digital technologies. These charts worked reasonably well in the past because traditional photographic media had relatively stable features, which did not vary much from the equipment available in one educational media center to another. The capabilities of digital video vary greatly from one computer system to another, depending on what software and hardware is used and how it is used.

Many teachers and instructional personnel familiar with the older attribute charts expect digital video to be comparable to traditional video and film. It is useful in these situations for a local media center or instructional lab to make their own attribute charts that are unique to the capabilities of the equipment in use.

Local attribute charts will indicate that some instructional objectives are better served if traditional video is used such as when higher resolution and longer program length are required. Most local attributes will suggest integration of digital video into computer applications or use when special effects are a priority. Specific attribute charts would prevent misconceptions of the capability of digital video and publicize its new features to potential new users.

Local Digital Video Attribute Chart

	Standard Quicktime	**Screen-Sized Quicktime**	**Computer-Assisted Videotape Editing**
Features	Random accessibility and no loss of quality when duplicated; extensive special effects can be applied to any point and to entire scenes	Same features as standard Quicktime but at higher resolution and size	Some advantages of the digital format are short special effect sequences and transitions, but because of the videotape format, no random accessibility and a loss of quality when duplicated
Size and Length	Screen size is ¼ of the standard television format; scene length can be a maximum of several minutes with a large amount of computer memory	Full screen size, but lower in resolution than standard television; a few minute sequence requires the very highest capacity disc storage system	Standard television (NTSC) resolution and screen size; can provide programming that is potentially many hours in length
Use with Common Programs	File size is small enough to import into popular word processing and database programs; is easily integrated into computer presentation programs with large-sized disc and computer memory configurations	Uses vast quantities of computer memory and files too large for typical word processing and database programs; can be integrated into computer multimedia presentations with the aid of large memory capacity	Cannot be integrated into computer applications because it is videotape-based
Hardware Required	No add-on equipment needed to view clips; an inexpensive digitizing board is necessary to input clips into the computer	Usually a top of the line computer is necessary in addition to a full screen digitizing board	In addition to a computer, several VCRs and other controlling devices are needed
Application in Instruction	Short video clips to support individualized instruction; small clip size and resolutions are adequate for the individual viewer	Short video clips to support classroom instruction; image quality and size great enough for classroom display	Ideal for longer story oriented educational television programming

Apple Movie Player

Creating a New Movie from Different Clips

1. To create a new clip, select the New command from the File menu. A standard controller bar will appear without a movie window.
2. Open movie clips, which contain elements for the new movie, with the Open command from the File menu.
3. Organize the clips into the order they must be edited.
4. Find a portion of the first clip that you would like to edit as the first part of the new movie.
5. Select this portion from the play bar by clicking and dragging the play bar slider control while holding down the Shift key. The portion that is selected will be highlighted along the play bar. For more precise selections, use the Shift key in conjunction with the Left and Right arrows on the keyboard or the step controls on the standard controller.
6. Once the desired portion of the clip is highlighted, use the Copy command in the Edit menu.
7. Select the new file with the mouse to make it active.
8. Use Paste from the Edit menu. This will cause the movie window to be filled by the first scene.
9. Repeat steps 6, 7, and 8 with the subsequent scenes that make up the new movie.

Replacing Video Over Portions of Another Video

1. Select a portion of a movie that will be inserted into part of another movie by using the step controls on the standard controller in conjunction with the Shift key on the keyboard.
2. Use the Copy command from the Edit menu.
3. Select a portion of the destination movie which you want to replace with the one you copied by using step controls and the Shift key on the keyboard.
4. Use the Shift key in conjunction with Edit and Replace in order to place the portion of a scene you copied in the selected area.

Adding Video into Other Video

A similar but different technique follows where the purpose is not to replace portions of one video clip with another but to simply add to what is already there:

1. Select a portion of one video clip which is to be added to another by using the Shift key in conjunction with the step controls on the standard controller.
2. Use the Copy command from the Edit menu.

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3. Use the play bar slider control in the destination movie to find the point where you want to add the clip you copied.

4. Use the Option key in conjunction with Edit and Add in the menu. The result will be the addition of the track you copied, starting at the position in which the slider was located along the play bar.

Adding Video Without Adding to Movie Length

If you wish to fit video from one clip into a selected portion of another clip without exceeding the length of the selection, use the Add Scaled command:

1. Select a portion of a movie to be copied using the Shift key and step control. It can be longer or shorter than the portion of the destination movie.

2. Use the Copy command from the Edit menu.

3. Make a selection in the destination movie where the copied clip is to conform using the Shift key and step control.

4. Use the Shift and Option keys in conjunction with the Add Scaled command in the Edit menu. Unless selections are the same size, Add Scaled will either speed up or slow down a copied movie in order to conform it to the size of the selection.

Adding an Additional Sound Track

1. Select a movie which has a sound track you would like to add to another movie.

2. Use the Extract Tracks command from the Edit menu and an Extract Tracks window appears.

3. Select the Sound Track listing in the Extract Tracks window and click Extract.

4. A sound-only Quicktime file will appear.

5. Make sure the sound-only file is active by clicking on it.

6. Use Select All from the Edit menu. If only a portion of the sound track is desired, this can be selected with the Shift key and step control.

7. Select the start point for the second soundtrack by using the play bar slider in the destination movie.

8. Use the Option and Add selections from the Edit menu to add the sound as a second soundtrack.

9. If you wish the sound added to the movie to replace the original track, this can be accomplished with the additional step of deleting the original track. To delete a track, use the Delete Tracks command from the Edit menu. In the Delete Tracks window, select the sound track to be deleted.

10. You do not need to delete a track if you think you might use it later. You can disable a track by using the Enable Tracks command in the Edit window (yes, you can disable tracks in the Enable Tracks window). Turn *off* the undesired track in the Enable Tracks window. Simply turn the track back *on* when you want to enable it again.

Creating a Slide Show of Still Pictures

The easiest way to create a slide show of multiple still pictures is to Cut and Paste individual PICT files directly into a movie. This can often take quite a bit of time if many files are involved. ConvertToMovie is a separate program that is often provided with MoviePlayer which will import many files at a time. To convert a series of picture files into a Quicktime movie, the files must be the same size and have a common name and sequence of numbers (Dog.1, Dog.2, . . .).

1. Open the ConvertToMovie program—The program will direct you to select the first and last picture in the numbered series.

2. Next a Compression Settings box appears in which you will enter the rate at which the frames will be displayed in the movie window. Enter "1" for one frame a second or ".5" for one frame every two seconds, and so on. Then click OK. This setting is not that important if the step controls on the standard controller are used to advance frames one at a time.

3. Click OK in the Conversion Options box and then Save the new movie.

Adding a Text Track

In adding a text track, the text must be created in another program because MoviePlayer does not have word processing capability. Another factor is the duration that the text track will appear. When the text is added, the default length is about 20 frames, which often only covers a portion of the movie. The rest of the movie will have a blank white area after the text runs out. The text track may cover the length of the entire movie if the Add Scaled command is used. Text may also simply be pasted (Paste) from the Edit menu directly into the start or end of a movie in order to provide a title or credit screen. This is a convenient technique because the text is automatically centered and formatted within the movie window. The disadvantage of pasting text is that it overrides other tracks. Music or sound tracks must be added under the portion of the movie taken up by the pasted-in titles. All of the text added or pasted into Quicktime movies retain their color, size, and font characteristics.

1. Type text using the Notepad command found in the Apple menu of MultiFinder. Any word processor may also be used, but if you are running on a machine with low memory, Notepad does not require much memory to open and may be opened at the same time MoviePlayer is active.

2. Select and Copy the text, then return to MoviePlayer.

3. Use the Shift key and play bar step control to select a portion of the movie in which you want a text window to appear. Then use the Option key and the Add command from the Edit menu.

4. If you want the text track to be added to the entire length of the movie, use the Shift and Option keys in conjunction with the Add Scaled command in the Edit menu.

5. To reduce the memory size of the Quicktime file, you may burn the text into the movie window. This is done with the aid of a Text Movie Converter shareware program. This step is usually not necessary unless it is critical to conserve every bit of memory.

6. Another shareware program, DeskTopText, provides more options for the creation of a text track than MoviePlayer. Scrolling text is one example. This step is not usually necessary because two tracks (text and video) in motion at the same time are often too distracting.

Multiple Text Additions

Several phrases may be added back to back onto a movie by cutting and adding each phrase one at a time. When such a movie is played back, it will display the phrases consecutively. A more efficient way to do this is to type the phrases with a carriage return between each one and then save the word processing file. The Import command from the File menu is used in MoviePlayer to import the entire file.

Educational Video Production Team

Video production, whether carried out by a professional crew or a group of friends, usually involves the coordinated effort of several people who take on specialized roles to accomplish the task. The following roles will be used in the video development exercise for this class and can serve as models for similar video production activities by your future K-12 students.

Director
This person takes primary responsibility for . . .

- coordinating the work of all of the team members throughout the video development process.
- leading the video production team in its initial planning (e.g., identifying purpose, audience, and instructional objectives for the video; outlining its key elements; anticipating any support materials that may be needed with the video; brainstorming ideas for effective video segments/techniques; and identifying needed resources).
- coordinating the team (both actors and production people) as it rehearses or shoots the video itself.
- overseeing editing decisions.

Screen Writer
This person takes primary responsibility for . . .

- writing the script for the video.

  Scripts often contain dialog, narration, shot types, scene descriptions, visual or audio special effects, lighting requirements, and transition ideas between scenes. Regular communication with a subject matter expert may be necessary to verify the accuracy of the video's content.

- developing the storyboards for the video, based on the group's consensus regarding the video's purpose; audience; objectives; theme or storyline; and the constraints of available resources, "talent," and settings for the taping itself.

  Storyboards are sketches of actual video scenes, representing the camera angles/points of view, special effects, and so on that are to be included in the shoot.

Producer/Videographer
This person takes primary responsibility for . . .

- using the script and storyboards to develop an equipment list, including lighting and sound equipment, camcorder, tripod, batteries, and so on.
- using the script and storyboards to develop a location list (Where is the best place to shoot the video segments? What are their unique lighting and sound constraints?).
- using the script and storyboards to develop a prop list (What props are needed? Who will locate them? How will they be transported to the locations?).

- developing a shot list (What shots? In what sequence?) and a schedule to accomplish them. This schedule allows time to preview the video shots to determine if retakes are necessary, set up equipment, and tear down to move onto another scene.

- lighting and shooting scenes according to the shot sequence and determining when it is time to move onto another scene.

- recording in-camera counter numbers for each scene so each segment can be located during the editing phase.

Editor
This person takes primary responsibility for . . .

- developing an edit list that contains a sequence of scenes based on the script and their corresponding locations on the original videotapes.

- digitizing all video clips if computer editing is to be used.

- assembling and piecing the video together, using the script and edit list as guides.

- working closely with the writer and the editor to create the mood and pace of the video as intended.

- adding transitions, titling, music, and special effects to the extent possible with the editing equipment being used.

College of Education and Human Services
Western Illinois University
Macomb, Illinois

1996

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Planning for Effective Technology Integration

Dr. Tim McLaughlin

Ameritech

WIU Western Illinois University

Tools for Teaching with Technology

The WIU Approach
to Integrating Technology
into Teacher Education

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Planning for Effective Technology Integration

Dr. Tim McLaughlin, Department of Instructional Technology and Telecommunications

Module Context

Course Description

ITT 233 - Production of Instructional Materials. Introduces the planning and production of materials for presentations in instruction, training, and public relations, including graphic, computer, and video designed materials.

Course Prerequisites

None

Additional Courses Where Module Could Potentially Fit

Any course in the College of Education and Human Services that addresses lesson planning, curriculum development, or thematic unit design

Other Relevant Student Characteristics

The skills learned in this module will be most applicable in the fields of education and training. Students participating in this module should be planning a career in one or both of these fields.

Module Focus

Title of the Module

Planning for Effective Technology Integration

Content Area of the Module

Instructional design for education or training

Description of the Module

This module will present a systematic procedure for the development of instruction or training. Students will develop skills in eight areas of instructional development: (1) identifying an instructional problem, (2) analyzing the learning style of the students, (3) establishing tasks and timelines, (4) writing objectives, (5) specifying the instructional and learning methods, (6) choosing the instructional media that will best affect the instruction and learning, (7) evaluating the effectiveness of the instruction, and (8) developing plans to fine-tune the instruction.

Ameritech Student Outcome(s) Supported

- To evaluate and use communications technologies along with computers and multimedia to support the instructional process.
- To identify technology-based resources for a wide array of academic subjects for elementary and secondary grade levels.
- To design and develop learning activities that integrate computing and communications technologies for students at different achievement levels, including gifted and those with disabilities, and for diverse cultural student populations.

Specific Module Objectives

- To identify an educational problem by comparing a given situation to a desired outcome that can be solved by instructional technology.
- To write a problem statement.
- To administer and evaluate the results of an instrument that will assess a student's learning style.
- To identify the tasks to systematically develop instruction.
- To develop a Gantt Chart to the tasks in systematically developing instruction.
- To write enabling and terminal objectives.
- To name and identify the strengths of instructional strategies.
- To specify the instructional strategy and learning styles to be utilized in solving an instructional problem.
- To choose the instructional technology(ies) that will best affect the instruction strategy and learning styles in solving an instructional problem.

- To develop an instrument to assess the effectiveness of the instruction.

- To develop plans to fine-tune the instruction.

Technology Competencies Developed Through the Module

After completing this module, the students will be able to select technology tools to fit content, learning objectives, instructional and learning activities, and student characteristics; identify and access technology tools and resources; and evaluate effectiveness of technology-enhanced instruction.

Module Contents

Teaching Strategies

The instructor will present ten sessions in a lecture-demonstration-discussion-workshop mode. Each session will be structured to demonstrate the areas of instructional design presented in this module. This structure will be repeatedly drawn to the student's attention as a means of promoting the transfer of the learning from theory to practice. The instructor will also be utilizing a computer-based instructional program to reinforce class material.

Learning Strategies

Computer-based instruction will allow the students to review material outside of class in a self-directed, self-paced, and self-evaluated manner. They will also have assigned readings to complete.

Ways Students Will Demonstrate Competency/ Assessment

Each student will demonstrate his or her competency by developing an instructional system for the subject area of their choice. This system will include the following:

- a statement of an instructional or learning problem

- an analysis of their students' learning styles (the instrument will be anonymously administered to their own ITT 233 class)

- the development of a Gantt Chart

- the writing of instructional objectives

- the specification of the instructional and learning methods that they will use

- the choice of the instructional technologies they will use

- the development of an evaluation instrument to assess the effectiveness of the instruction

Ways Students Will Learn How To Use Technology in Their Classrooms

By the actual development of an instructional system for a class in the subject area of their choice as stated in the section above for demonstrating competency/ assessment.

Module Implementation

Print Materials Needed

A textbook chapter or reading on instructional design models

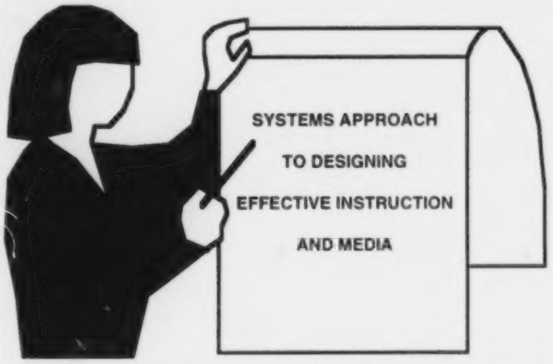
Equipment/Technology Needed

- Overhead projector
- Color LCD panel
- Macintosh computer (Centris 610 or better)
- Document camera
- Videotape player

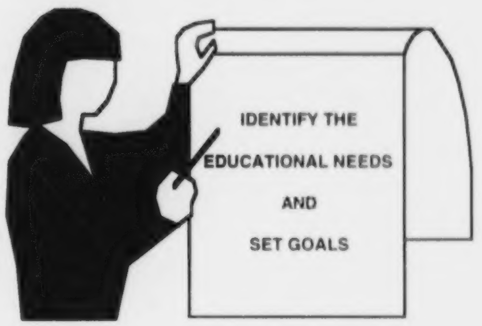
Software or Other Electronic Media Needed

- Aldus Persuasion
- Computer Tutor ($300.00)
  Cape Associates, Inc.
  8980 Cheshire Drive
  Sandy, UT 84092
  (801) 943-4300

Supplementary Materials



SYSTEMS APPROACH
TO DESIGNING
EFFECTIVE INSTRUCTION
AND MEDIA



IDENTIFY THE
EDUCATIONAL NEEDS
AND
SET GOALS

Objectives:

1. Define instructional design.
2. Explain what is meant by the term "effective instruction."
3. Explain what is meant by the term "systematic process."
4. List four stages that all instructional design models have in common or share.

Objectives:

5. List the 11 stages in the ITT 233 instructional design model.
6. Diagram the ITT 233 instructional design model.
7. Draw a diagram showing the 8 stages of the ITT 233 instructional design model that impact the selection of instructional media.
8. Explain what is done in the first stage of instructional design when the educational needs have been identified.

Objectives:

9. State the purpose of writing a goal.
10. Explain the difference between the cognitive, psychomotor, and affective domains of learning.
11. Provide examples of goals written for the cognitive, psychomotor, and affective domains of learning.
12. Provide examples of media that might be selected for instructional support in the cognitive, psychomotor, and affective domains of learning.

Instructional Design

Instructional design is a systematic process whose outcome is the creation of effective instruction. That is, instruction which allows students to develop specified new skills, knowledge, and attitudes.

There are over 80 instructional design models that have been developed in the past 25 years.

All of these models are a *systematic process*, which means that they follow a series of steps.

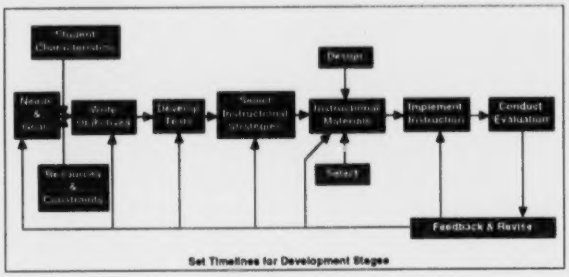
They also share four common stages:

1. design
2. development
3. implementation
4. evaluation

Stages in the ITT 233 Instructional Design Model

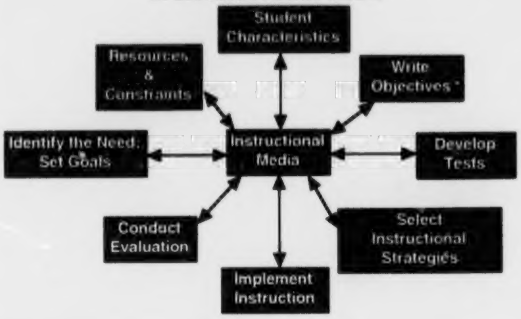
1. Identify the educational needs and set goals.
2. Set timelines for development stages.
3. Analyze the student characteristics.
4. Determine resources and constraints.
5. Write objectives.
6. Develop tests.
7. Select instructional strategies.
8. Design or select instructional materials.
9. Implement the instruction.
10. Conduct the evaluation.
11. Receive feedback and revise.

ITT 233 Instructional Design Model


Student Characteristics
Needs & Goals
Write Objectives
Develop Tests
Select Instructional Strategies
Design
Instructional Materials
Select
Implement Instruction
Conduct Evaluation
Resources & Constraints
Feedback & Revise

Set Timelines for Development Stages

Eight Stages that Impact the Design or Selection of the Instructional Media


Student Characteristics
Resources & Constraints
Write Objectives
Identify the Need; Set Goals
Instructional Media
Develop Tests
Conduct Evaluation
Select Instructional Strategies
Implement Instruction

Instructional Design Model

Identify the Educational Needs & Set Goals
Needs & Goals

Identifying the Educational Needs:

Identifying educational needs is a matter of identifying *what exists* and comparing it to *what is desired.*

Current State
Desired State

If the difference between "what exists" and "what is desired" is significant, there may be a need for an instructional intervention.

Identifying the Educational Needs:

The process of identifying the need for an instructional intervention may be simple:

- A teacher's observation
- Discussion with parents
- Listening to the desires of students

or, complex:

- Involving a team
- Utilizing brainstorming techniques

Identifying the Educational Needs:

What are some differences between "what is" and "what is desired" that would warrant an instructional intervention?

What is:	What is desired:

Identifying the Educational Needs:

What are some differences between "what is" and "what is desired" that would NOT warrant an instructional intervention?

What is:	What is desired:

Setting the Goals

Once an educational need has been identified, a goal(s) should be written stating the desired outcome(s) of the instructional intervention.

For example:

A 3rd grade math program at an elementary school does not provide the students with the necessary skills for doing long division.

The goal might be . . .

All 3rd grade students will be able to calculate the quotient in a long division problem.

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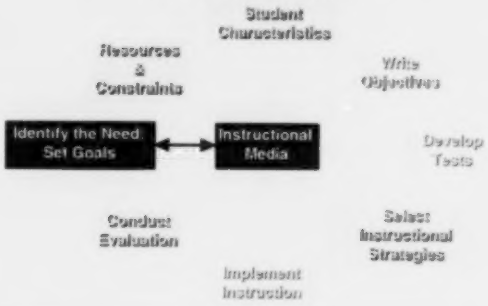
Setting the Goal and Design/Selection of Instructional Media



Student Characteristics

Resources & Constraints

Write Objectives

Identify the Need. Set Goals

Instructional Media

Develop Tests

Conduct Evaluation

Select Instructional Strategies

Implement Instruction

Setting a goal influences the types of instructional media that may be selected.

In the example of long division, the goal has been set in the cognitive (knowledge) domain of learning.

The selection of instructional media might be different if the goal had been in the psychomotor (physical activities) domain or in the affective (attitudes) domain.

For Example:

***Cognitive Goal*: Recite the Gettysburg Address.**

Media might include . . .
- **Hard copy text of the speech**
- **Audio recording of the speech**

***Psychomotor Goal*: Improve ability to score basketball free throws.**

Media might include . . .
- **Basketball**
- **Basketball court**
- **Camcorder**

For Example:

***Affective Goal*: Display greater tolerance for people of diverse cultures.**

Media might include . . .
- **Films of various cultures**
- **Dress up in traditional clothes**
- **Multicultural food fair**

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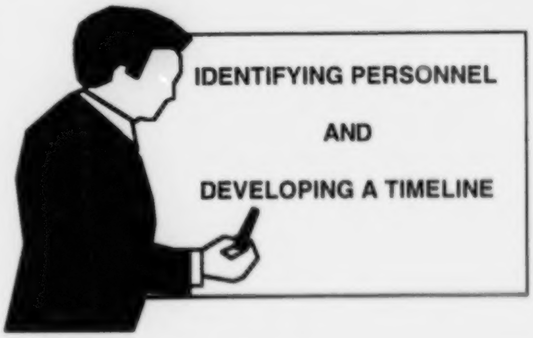


IDENTIFYING PERSONNEL

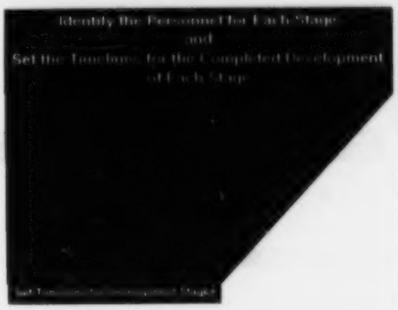
AND

DEVELOPING A TIMELINE

Objectives:

1. State the reason for identifying personnel that can assist in the instructional design effort and for determining the time required for the development of each stage.
2. Explain what is specified in a Responsibility Table.
3. Create a Responsibility Table.
4. Explain what is specified in a Gantt Chart.
5. Create a Gantt Chart.

Instructional Design Model


Identify the Personnel for Each Stage
and
Set the Timelines for the Completed Development
of Each Stage

Stages and Timelines

In many cases, the tasks involved at each stage of instructional development may fall directly on the shoulders of the classroom teacher.

With luck, some tasks may be assigned to a program assistant while others may be appropriate for the school's media specialist or the school's counselor to address.

Regardless, the time taken to determine who can assist at each stage and how long each stage should take can greatly facilitate the overall instructional design effort.

There are two ways of looking at the stages of development and timelines:

1. Responsibility Tables
2. Gantt Charts

These two methods can be used separately or together.

The first method, a Responsibility Table, focuses on who is best suited to assist with development of each stage. It specifies

- the stage of instructional design.
- who can assist with the development of each stage.
- how much time is needed to develop each stage.
- the date that each stage should be finished.

Responsibility Table

Stage	Assigned	Time Needed	Due
1. Analyze the student characteristics			
2. Determine resources and constraints			
3. Write objectives			
4. Develop tests			
5. Select instructional strategies			
6. Design or select instructional materials			
7. Implement instruction			
8. Conduct the evaluation			
9. Receive feedback and revise			

Responsibility Table

Stage	Assigned	Time Needed	Due
1. Analyze the student characteristics	Counselor	50 min. in class 3-wk evaluation	9/20
2. Determine resources and constraints	Teacher Media Specialist Principal	1 week	9/6
3. Write objectives	Teacher	2 days	9/10
4. Develop tests	Teacher	3 days	9/13
5. Select instructional strategies	Teacher	2 days	9/24
6. Design or select instructional materials	Teacher Media Specialist	4 weeks	10/23
7. Implement instruction	Teacher	2 weeks	10/28
8. Conduct the evaluation	Teacher	50 minutes	11/12
9. Receive feedback and revise	Teacher Media Specialist	1 week	11/19

The second method, a Gantt Chart, focuses on

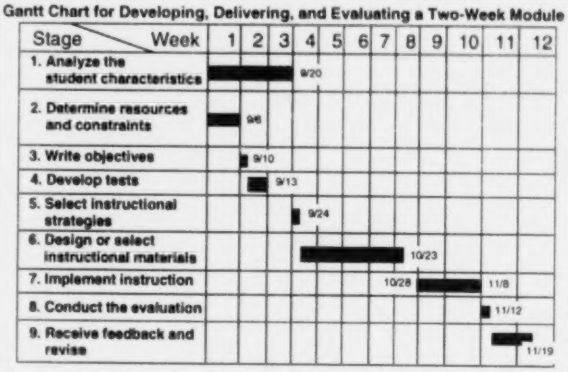
- **when each stage starts.**
- **how long it takes to complete.**
- **when it is due for completion.**

A Gantt Chart is generally used to keep track of the progress of an instructional design project.

Gantt Chart for Developing, Delivering, and Evaluating a Two-Week Module

Stage Week	1	2	3	4	5	6	7	8	9	10	11	12
1. Analyze the student characteristics												
2. Determine resources and constraints												
3. Write objectives												
4. Develop tests												
5. Select instructional strategies												
6. Design or select instructional materials												
7. Implement instruction												
8. Conduct the evaluation												
9. Receive feedback and revise												

Gantt Chart for Developing, Delivering, and Evaluating a Two-Week Module



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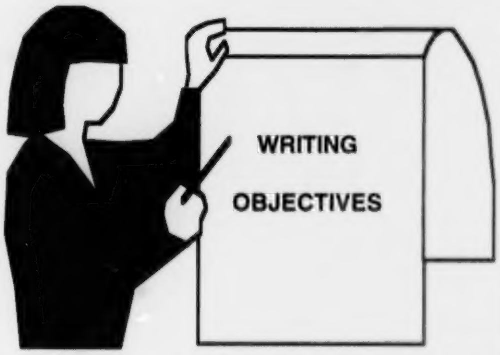


Objectives:

1. Define the phrase "learning objective."
2. Name and describe four general uses for learning objectives.
3. Explain who the subject of a learning objective is.
4. Explain the functions of the three components that need to be considered while writing a learning objective.
5. Explain the importance of using an action verb in the statement of the terminal behavior.

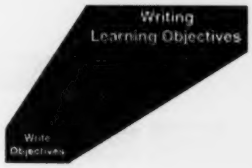
Objectives:

6. Write examples of ambiguous verbs that should NOT be used in a learning objective and examples of precise verbs that should be used.
7. Given a learning objective, be able to identify the required components: the terminal behavior, standards, and conditions statements.
8. Explain how writing a learning objective can influence the selection and/or design of instructional media.

Objectives:

9. Write four examples of action verbs that are used in developing learning objectives for each of the learning domains (cognitive, psychomotor, and affective).
10. Write learning objectives that are composed of a terminal behavior statement containing an action verb, a standards statement, and a conditions statement.

ITT 233 Instructional Design Model



Learning Objectives

Definition:

A precise description of student performance levels to be attained after instruction.

Uses of Learning Objectives:

1. To Guide Student Learning:

   The most important reason for writing learning objectives is that when they are given to students, they provide them with "cues."

   These cues focus their attention within the learning process and with the criteria by which the learning will be judged.

Uses of Learning Objectives:

2. To Evaluate Instruction:

   Learning objectives can be used to develop tests of student achievement.

   Collectively, the results of these tests can provide a base upon which the quality of the overall instruction is to be judged.

Uses of Learning Objectives:

3. **To Provide a Set of Criteria for Course Design:**

In designing instruction, many decisions must be made:

- what content is to be included
- how the content will be sequenced
- how the instruction will be presented
- what instructional aids will be needed

Learning objectives can provide the criteria for making these decisions.

Uses of Learning Objectives:

4. **In Communications:**

Learning objectives are communication devices between teachers and students. They clearly describe what is expected of the student in terms of achievement, how that achievement will be measured, and the conditions under which the measurement will be taken.

Uses of Learning Objectives:

4. **In Communications (cont.):**

Because learning objectives spell out what the expected outcomes are in a course, they are a useful communication tool at curriculum planning meetings in helping to sequence courses, or in relating one course to another.

Uses of Learning Objectives:

4. **In Communications (cont.):**

When dealing with parents, learning objectives are useful in describing the content of a course and specifying problem areas in a student's academic development.

Components of a Learning Objective

The number of components, or parts, of a learning objective varies from 3 to 7 depending on the instructional designer writing the objective.

In writing a learning objective, one component is always assumed: that the LEARNER is the subject of the statement.

The following is a common way to start writing a learning objective:

"The student will be able to . . ."

Whether or not the learner is stated as the subject, three other components need to be considered in the writing of all learning objectives:

1. *terminal behavior*
2. *standards* or criteria for determining the acceptability of the terminal behavior
3. *conditions* under which the terminal behavior is to occur

Terminal Behavior

The terminal behavior is a description of what the student will be able to do after instruction. It describes the acceptable performance that proves the objective was achieved.

In the following examples, the terminal behavior is underlined:

1. Convert the cubic feet . . .
2. Diagram a rotary . . .
3. Adjust the timing . . .
4. Exhibit a greater . . .

The key to writing a meaningful terminal behavior component is the selection of the verb in the sentence.

Within the objective, the terminal behavior needs to be described using an *action verb*, a clear statement of something that can be observed in assessing learning outcomes.

Some verbs are so ambiguous that they should not be used in writing a terminal behavior.

These verbs are so vague that they convey almost no meaning in describing the behavior that is to be observed when assessing learning outcomes.

Ambiguous Verbs	Action Verbs
know	compare
understand	classify
appreciate	exhibit
comprehend	manipulate
master	operate (a machine)
be aware of	display an awareness

Verb Comparisons – Student Suggestions

Ambiguous Verbs	Action Verbs

Standards

Standards are a description of how the student's performance on the terminal behavior will be judged.

The standard describes the minimal level of acceptance for performance as follows:

- 8 out of 10 correct
- accurate to .1 of a pound
- same as in the textbook
- as discussed in class

Conditions

Conditions are a description of the circumstances (situation and/or resources) under which the demonstration of the terminal behavior will occur.

There are three general types of conditions that affect a student's performance on a terminal behavior:

1. Aids & Tools
2. Restrictions
3. Information Exchange

Conditions – Aids & Tools:

1. The aids or tools that the student will be allowed to use in performing the behavior may include the following:
   - textbook
   - notes
   - maps
   - computer
   - shop tools

Conditions – Restrictions:

2. Restrictions placed on the student may include the following:
   - no references
   - time limits
   - floor space (dance competitions)
   - air space (aeriel acrobatics)
   - written in class

Conditions – Information Exchange:

3. How the information will be presented to the student and/or how the student will present the information to demonstrate the terminal behavior may include . . .
   - a computer simulation
   - a 500-word essay, written in class within the 50-minute period

Writing Objectives

In writing a learning objective, the three components —terminal behavior, conditions, and standards—can be stated in any order.

Most commonly, either the terminal behavior or conditions start the objective while the standards are usually stated at the end.

Study the objectives that follow. Try to identify the terminal behavior, conditions, and standards.

Learning Objective 1:

The student will be provided a list of 200 electronic terms, allowed no references, and given a timed test after instruction. The student will define the electronic terms. Performance will be satisfactory if all 200 terms are defined consistent with the text in 100 minutes for a testing three months after the completion of the formal instruction.

Learning Objective 1:

The student will be provided a list of 200 electronic terms, no references, and a timed test after instruction. The student will *define the electronic terms.*

Performance will be satisfactory if all 200 terms are defined consistent with the text in 100 minutes for a testing three months after the completion of the formal instruction.

Terminal Behavior = __________

Learning Objective 1:

The student will be provided a list of 200 electronic terms, no references, and a timed test after instruction. The student will define the electronic terms. Performance will be satisfactory if *all 200 terms are defined consistent with the text in 100 minutes* for a testing three months after the completion of the formal instruction.

Standards = __________

The "testing three months after" is not part of the standards statement. It is an objective component called durability.

Learning Objective 1:

The student will be provided a *list of 200 electronic terms, no references, and a timed test after instruction.* The student will define the electronic terms. Performance will be satisfactory if all 200 terms are defined consistent with the text in 100 minutes for a testing three months after the completion of the formal instruction.

Conditions = __________

Another Way To Write Learning Objective 1

Three months after the formal instruction is completed, at a timed 100-minute test, students will, given no references, define all 200 electronic terms that were provided earlier.

Another Way To Write Learning Objective 1

Three months after the formal instruction is completed, at a timed 100-minute test, students will, given no references, *define* all 200 *electronic terms* that were provided earlier.

Terminal Behavior = __________

Another Way To Write Learning Objective 1

Three months after the formal instruction is completed, at a timed *100-minute test*, students will, given no references, define *all 200 electronic terms that were provided earlier.*

Standards = __________

Another Way To Write Learning Objective 1

Three months after the formal instruction is completed, at *a timed* 100-minute *test*, students will, given no references, define all *200 electronic terms* that were *provided* earlier.

Conditions = __________

Learning Objective 2:

Given a self-instructional videotape on formal mounting techniques, five pictures, and all of the necessary dry mounting supplies and equipment, the student will produce five formal mounts within 30 minutes using 11" X 14" 10-ply poster board and dry mount tissue. In four out of five mounts, the pictures are to be no more than 1/8" off on the sides, top, and bottom. They should be firmly affixed to the board and have no visible bubbles.

Learning Objective 2:

Given a self-instructional videotape on formal mounting techniques, five pictures, and all of the necessary dry mounting supplies and equipment, the student will *produce five formal mounts* within 30 minutes using 11" X 14" 10-ply poster board and dry mount tissue. In four out of five mounts, the pictures are to be no more than 1/8"off on the sides, top, and bottom. They should be firmly affixed to the board and have no visible bubbles.

Terminal Behavior = __________

Learning Objective 2:

Given a self-instructional videotape on formal mounting techniques, five pictures, and all of the necessary dry mounting supplies and equipment, the student will produce five formal mounts *within 30 minutes* using 11" X 14" 10-ply poster board and dry mount tissue. *In four out of five mounts, the pictures are to be no more than 1/8" off on the sides, top, and bottom. They should be firmly affixed to the board and have no visible bubbles.*

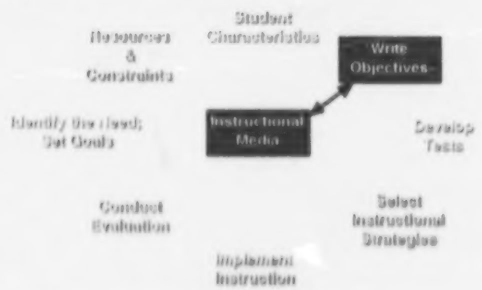
Standards = __________

Learning Objective 2:

Given a self-instructional videotape on formal mounting techniques, five pictures, and all of the necessary dry mounting supplies and equipment, the student will produce five formal mounts within 30 minutes using *11" X 14" 10-ply poster board and dry mount tissue* . In four out of five mounts, the pictures are to be no more than 1/8" off on the sides, top, and bottom. They should be firmly affixed to the board and have no visible bubbles.

Conditions = __________

Learning Objective 2 illustrates how the statement of an objective can influence production and selection of instructional media. In that case, a videotape and five pictures were used.



Objectives and Domains of Learning

Setting the goals establishes the domain(s) (cognitive, psychomotor, or affective) the instruction is being designed to affect.

Writing the learning objective focuses on the terminal behavior within the domain(s) set in the goal.

This focus is specified by the selection of the action verb in the learning objective.

Objectives and Domains of Learning

Action Verbs in the Cognitive Domain:

analyze
choose
design
estimate
formulate
illustrate
list
order
recall
state
assist
classify
determine
explain
group
label
name
plan
select
verify

Objectives and Domains of Learning

Action Verbs in the Psychomotor Domain:

adjust
center
connect
draw
install
measure
perform
show
tell
use
balance
clean
disassemble
hold
manipulate
operate
respond
speak
touch
utilize

Objectives and Domains of Learning

Action Verbs in the Affective Domain:

demonstrate
display
exhibit
show

Writing Objectives

When starting to write objectives, it is a good idea to proceed in the following manner:

1. Write the *terminal behavior.*
2. Write the *standards* statement.
3. Based on the terminal behavior and the standards, write the *conditions* statement.
4. Reoganize each of these statements and correct any grammar errors to create a learning objective.

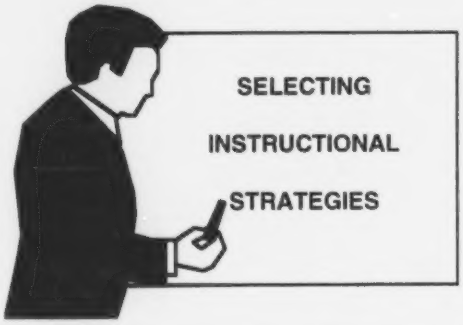
"Write An Objective" Exercise

Following these steps, write a learning objective related to your area of concentration.

Step 1: (terminal behavior)

Step 2: (standards)

Step 3: (conditions)



SELECTING INSTRUCTIONAL STRATEGIES

Objectives:

1. List four general characteristics that should be considered when choosing instructional strategies for *cognitive* learning objectives.
2. List four specific instructional strategies that might be used with cognitive learning objectives.
3. List four general characteristics that should be considered when choosing instructional strategies for *psychomotor* learning objectives.
4. List four specific instructional strategies that might be used with psychomotor learning objectives.

Objectives:

5. List three general characteristics that should be considered when choosing instructional strategies for *affective* learning objectives.
6. List four specific instructional strategies that might be used with affective learning objectives.
7. Explain how selecting the instructional strategies can affect the choice of media that will be used in the instruction.

ITT 233 Instructional Design Model

Selecting Instructional Strategies
Select Instructional Strategies

What Is an Instructional Strategy?

". . . a description of what will be presented to the students, how it will be presented, and in what sequence."

Walter Dick, *Planning Effective Instruction*, 1989, p. 69

Instructional Strategies

- The learning objective with its terminal behavior, standards, and conditions has been written.
- The learning domains (cognitive, psychomotor, affective) have been established.
- With this information, the instructional strategies can be specified.

For Cognitive Objectives:

Use strategies with general characteristics that

- Focus on expanding existing knowledge.
- Present all of the information the student is required to know.
- Provide examples and nonexamples.
- Provide time for practice and feedback.

Possible Strategies:

lectures
(formal presentations)
individual projects
provide examples
outlines
pictorial presentations
group activities
stories
reading assignments
games
peer tutoring
self-paced exercises

For Psychomotor Objectives:

Use strategies with general characteristics that

- Provide information on performing the skill (e.g., the step-by-step process).
- Will explain the skill.
- Will demonstrate the skill.
- Provide time for practice and feedback.

Possible Strategies:

- active presentations
- bodily movements
- role plays and dramas
- hands-on activities
- learning by doing

For Affective Objectives:

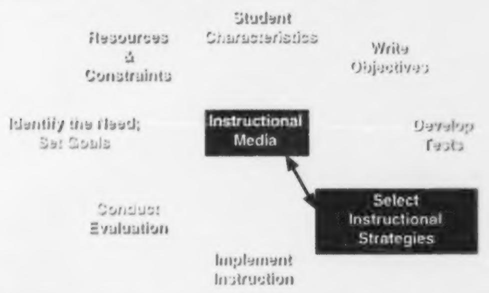
Use strategies with general characteristics that

- Provide motivation.
- Maintain interest.
- Present the information on how to change by someone who is recognized and admired by the audience.

Possible Strategies:

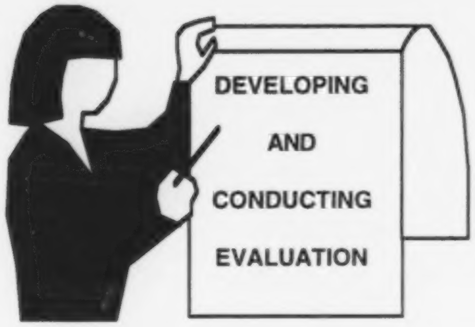
- lectures
- interactive presentations
- role plays, dramas, and storytelling
- rhythmic presentations
- field trips

Selecting instructional strategies has the following impact on the choice of instructional media:


Resources & Constraints
Student Characteristics
Write Objectives
Identify the Need; Set Goals
Instructional Media
Develop Tests
Conduct Evaluation
Select Instructional Strategies
Implement Instruction

Instructional Strategies & Media Selection

Strategy	Media
group problem solving or team building	games
writing stories	books, audiotapes
self-paced exercise	computer-based
hands-on activities	real objects, feltboards
bodily movements	videotape

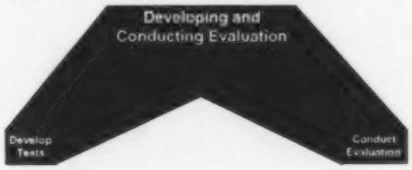


DEVELOPING AND CONDUCTING EVALUATION

Objectives:

1. Explain what part of the instructional design model serves as the basis for the development of test items.
2. Explain what is meant by the phrase, "a valid test item."
3. Given a learning objective, write a valid test item.
4. Explain how evaluation and instructional media are related in the practical classroom experience.

ITT 233 Instructional Design Model



Developing and Conducting Evaluation

Develop Tests

Conduct Evaluation

Developing Evaluation

Learning objectives serve as the basis upon which to develop test items.

The objective gives the *terminal behavior* for the evaluation, "the student will be able to identify 10 . . ."

It provides the *standards*, "9 out of 10."

And, the *conditions*, "without references."

So, a test item for this objective would ask the student to identify 10 items from memory. To prove that the student could consistently identify the items, 9 out of 10 would have to be correct on the question.

The key to developing a good test item is to review the learning objective and identify the learning domain and the terminal behavior.

Once the learning domain and terminal behavior have been identified, the possible options for the design of the test items are set.

Designs for Test Items in the Learning Domains

Cognitive:

Student are asked to . . .

- state
- list
- write an essay
- select from multiple choice
- describe
- complete

as specified in the terminal behavior of the learning objective.

Designs for Test Items in the Learning Domains

Psychomotor:

- The student is asked to perform a skill.
- A checklist or set of criteria is used.
- The process may be evaluated.
- The product may be evaluated.

Designs for Test Items in the Learning Domains

Affective:

Can be assessed by . . .

- watching for a consistent display of changed behavior in the student.
- providing a questionnaire about the desired behavior.

Developing Evaluation:

The learning objective will also specify the conditions that are necessary to include in the evaluation.

Conditions of the learning objective:

Given a model of the human torso, the student will point to the heart . . .

Included in the evaluation:

A model of the human torso

Developing Evaluation:

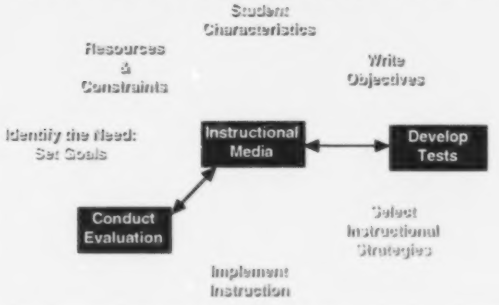
Conditions of the learning objective:

Provided with 20 pictures of plant and animal cells and not allowed to use references . . .

Included in the evaluation:

20 pictures of plant and animal cells

These two examples illustrate the relationship that exists between evaluation and instructional media.


Student Characteristics
Resources & Constraints
Write Objectives
Identify the Need: Set Goals
Instructional Media
Develop Tests
Conduct Evaluation
Select Instructional Strategies
Implement Instruction

If a test item requires the student to perform the same terminal behavior under the same conditions as stated in the learning objective, it is said to be a *valid* test item.

For example:

Objective: Given a puzzle of the United States, the student will reassemble it in less than 10 minutes.

Valid item: Assemble the puzzle

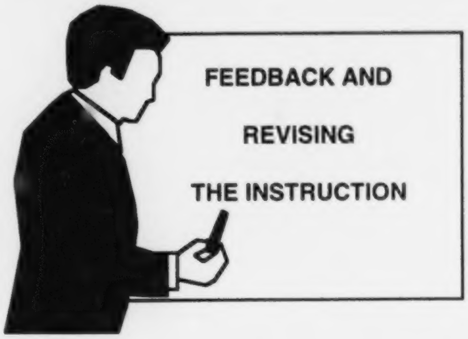
Invalid item: Name the states as they are put in the puzzle.

Invalid item: Assemble the puzzle in 5 minutes.

Developing Evaluation:

Go back to the learning objective that you wrote at the end of the WRITING OBJECTIVES presentation.

Use the learning objective to write a valid test item.



FEEDBACK AND REVISING THE INSTRUCTION

Objective:

Explain the purpose of the feedback and revision stage in the instructional design model.

ITT 233 Instructional Design Model

Feedback
and
Revising the Instruction
Feedback & Revise

Feedback

Evaluation serves two purposes:

1. Notifying students of achievement and difficulties they may be having in the course.
2. Providing information to the instructor in the form of data on the effectiveness of each objective in the course.

Revising the Instruction

Learning objectives that seem to be causing a number of students difficulty are good candidates for a review in the instructional design process.

Every stage of their development in the instructional design process should be re-examined from the assessment of the need and the writing of the goal to the delivery of the test item.

This type of continual data collection and course revision is critically important if the course is to continue to evolve and become more and more effective.

In summary, the purpose of the feedback and the revision in the instructional design model is to identify objectives that seem to be causing the students the most difficulty and to re-examine and revise the instruction related to these objectives.

This is not to say that an objective should also be so easily reached that no one has problems meeting the standards. It may, however, mean that either more prerequisite work needs to be done with the students in order to bring them up to the terminal behavior of the objective or the test question is ambiguous.

College of Education and Human Services
Western Illinois University
Macomb, Illinois

1996

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Technology Applications in the K-8 Science Classroom

Dr. John Beaver, Dr. Don Nelson, and Dr. Don Powers

Ameritech
WIU Western Illinois University

Tools for Teaching with Technology

The WIU Approach to Integrating Technology into Teacher Education

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Technology Applications in the K-8 Science Classroom

Dr. John Beaver, Dr. Don Nelson, and Dr. Don Powers
Department of Elementary Education and Reading

Module Context

Course Description
SCED 364 - Elementary Science Methods (1-2 class periods that include introductory level work as well as hands-on laboratory work with the technology). Students are expected to spend time working with direct instruction, exploratory, tool-use, and computer (logo-type) programming computer software. In addition, students are introduced to the interactive use of computer software, CD-ROM databases, and videodisc technology in science. Titles of exemplary computer software, CD-ROMs, and videodiscs have been included in this module.

SCED 490G - Environmental Science Education (2 class periods covering the available technologies for teaching environmental science). The selections include software that represent ecology, mapping, and astronomy as components of outdoor environmental education coursework.

SCED 491G - Biological Science for Elementary Teachers (2 class periods covering the available technologies for teaching biological science). The selections include the ecology and whales and their environment software as examples of the technology available for biology education.

SCED 492G - Physical Science for Elementary Teachers (2 class periods covering the available technologies for teaching physical science). The selections include tool-use software with probes for temperature, light and sound, construction and operation of robotic devices modeling simple machine applications, and astronomy databases.

Course Prerequisites
None

Additional Courses Where Module Could Potentially Fit
SCED 562 - Elementary Science Curriculum

Module Focus

Title of Module
Technology Applications in the K-8 Science Classroom

Content Area and Description
The technology applications included in this module are computer software, CD-ROM databases, and videodisc technology. The module is designed to allow students to utilize representative software and video technologies from Earth science, environmental science, biology, and physical science. The software, CD-ROMs, and videodisc selections are further representative of social science, mathematics, language arts, and reading curricula. This allows us to not only integrate technology with science, but also with the other commonplaces for learning in K-8 settings. The following are the types of interactive technology focused on in this module:

- *Direct instruction software* such as tutorials that serve to introduce procedures for laboratory experiments or techniques to be used in more complex problem-solving activities

- *Exploratory* software, including simulations and games that encourage problem-solving strategy development and allow students to work with naturally occurring events that might otherwise be too lengthy, too remote, or too dangerous

- *Tool-Use* software such as databases, spreadsheets, and word processing programs and tool-use hardware that allows students to use the computer as a laboratory tool to measure such things as light, temperature, sound, pH, and so on (An additional area in the tool-use category is the use of a computer program and videodisc to create specific lessons and/or reports. We will also introduce the use of Internet and other online programs to access remote databases in science such as NASA.)

Ameritech Student Outcome(s) Supported

- To identify resources for a wide array of academic subjects for elementary and secondary grade levels.
- To identify or design creative uses of telecommunications which develop student skills in problem solving, decision making, data collection, self-paced instruction, research, and communications.
- To identify resources for staying current in applications using communications technologies in education.

Specific Module Objectives

The representative software would enable students to address the following objectives in K-8 science education:

- Introduce the use of direct instruction computer software.
- Introduce the use of exploratory and problem-solving software.
- Introduce the use of tool-use software and communication technologies.
- Introduce the use of program design and robotic control software.
- Introduce the use of interactive computer software, CD-ROMs, and videodiscs to access data and construct specific laboratory activities.

Technology Competencies Developed Through the Module

Awareness

This module provides experiences for all elementary education majors in the areas of direct instruction, exploratory, tool-use, programming, and interactive video-computer materials. Students should become aware of the available commercial packages as well as the means for accessing information from remote sites.

Hands-On Experience

The module is intended to provide hands-on experience to students in small groups with representative programs and examples in the areas of direct instruction, exploratory, tool-use, programming, and interactive video-computer materials. During the two to three hours of in-class experience, students will rotate among four to six stations representing each of the areas mentioned above.

Skills Development

Students will have to complete one outside-of-class lab experience to develop their skills with representative programs and the use of sample evaluation materials for assessing the communication software and technologies.

Module Contents

The module will be presented using the following resources: "Information Technology Applications in the Science Classroom" handout; a video entitled *Computer Applications in the Science Classroom;* sample computer software representing direct instruction, exploration, and tool-use applications; sample CD-ROMs representing research and multimedia applications; and videodiscs with bar code capabilities.

Teaching Strategies

The presentation of ideas for using these materials in the elementary/middle school classroom includes a brief introduction utilizing the capabilities of the Elmo Visual Presenter to display examples. This is followed by the short video, *Computer Applications in the Science Classroom.*

Learning Strategies

Students work in cooperative groups of four during the classroom presentation of the various interactive media examples. Students are encouraged to work in collaborative pairs for a laboratory work assignment outside of the classroom. The purpose of the lab is to provide students with an opportunity to explore the capabilities of computer software, CD-ROM, and videodisc technologies. The tasks included are as follows:

1. Research a topic in physical or biological sciences and outline the elements available to a student using a specific CD-ROM.

   Example:
   CD-ROM Title: *The Way Things Work*

Questions:

- What can I find out about airplanes?
- What definitions are included?
- What graphics are included?
- What movie segments are included?
- What is the related history?
- What are the related machines?
- Who is the inventor?

2. Review *The Voyage of the Mimi* videodiscs and develop a sequence for viewing both portions of an episode and portions of an expedition as a classroom activity for children. The sequence should be developed around a concept or topic that might show the relationship of various video segments to the concept selected. Example: How are whales identified and classified? Develop a video sequence to show how this is accomplished in both the episodes and expeditions.

3. Review representative software samples for direct instruction, exploratory, and tool-use computer applications.

4. Record the connections to other curriculum areas, including mathematics, reading, writing, and social studies.

Assessment

Student competency will be measured by the quality of the laboratory report submitted and through questions included on either midterm or final examinations concerning interactive media in the science classroom. Further competency may be demonstrated by individual students through the use of various elements of the module in their science/social studies field experience.

Ways Students Will Learn How To Use Technology in Their Classrooms

Students will be encouraged to apply their lesson planning skills to the development of technology-related activities for the children they instruct during their science/social studies field experience. This field experience takes place during the same semester that the materials are introduced in the science methods class, therefore offering undergraduates an immediate opportunity to turn their experiences into classroom practice.

Module Implementation

Print Materials Needed

- "Information Technology Applications in the Science Classroom" handout developed by J. Beaver, D. Nelson, and D. Powers
- Teacher's guide for *The Voyage of the Mimi*
- Student reader for *The Voyage of the Mimi*
- Student workbook for *The Voyage of the Mimi: Maps and Navigation*
- Student workbook for *The Voyage of the Mimi: Introduction to Computers*
- Student workbook for *The Voyage of the Mimi: Light, Temperature, and Sound Measurement* computer module

Equipment/Technology Needed

- Macintosh computers equipped with a minimum of 4 MB of memory, including CD-ROM and electronic mail capabilities
- Videodisc playback systems equipped minimally with a bar code reader

Software or Other Electronic Media Needed

The Voyage of the Mimi videodisc & Macintosh software (7 videodiscs and guides, Explore & Discover computer software for interaction with the videodiscs, three computer learning modules, overview guide, and student books)

CD-ROMs

For a complete listing of suggested CD-ROMs (available through the WIU Science Education Center), see pages 4 and 5 in the Supplementary Materials section of this module.

Videodiscs

The complete set of *The Voyage of the Mimi* videodiscs, which includes the 13 episodes and 13 expeditions

Supplementary Materials

Information Technology Applications in the Science Classroom

Information technology applications for the science classroom fall into several categories and include computers and computer software, interactive media, and information networks.

Computers may have several levels of sophistication, including a CD-ROM player and modem. The first allows the computer user to interact with sights and sounds stored on a CD-ROM. The second allows the user to network with other users across the room or across the world through such services as the Internet.

The following represents a brief description of the general types of computer software and representative examples of other interactive multimedia materials available for the elementary/middle school science classroom.

Computer Software

Computer software designed for use in the science classroom is represented by three general areas. The three areas include direct instruction, exploratory, and tool-use applications. The following is a description of the characteristics of programs from these three areas with some specific examples.

Direct Instruction

Several *drill and practice* programs are available for science instruction such as Scholastic's "10 Science Lessons." Programs of this type may be used to reinforce ideas learned through science activities and textbook readings. Their role in science education is very limited. A second type of direct instruction software is the *tutorial*. Tutorials may serve to introduce procedures for laboratory experiments or techniques and strategies to be used in more complex problem-solving activities. An example of the latter is *The Voyage of the Mimi: Maps and Navigation* computer activities. The beginning programs in this module represent tutorials in the following areas: "Pirate's Gold," dealing with latitude/longitude; "Hurricane," dealing with compass/map scale/heading/plotting a ship's course; and "Lost at Sea," dealing with radio direction finding, compass work, and triangulation geometry.

The three tutorial programs help students build a knowledge base for using "Rescue Mission," the final program in the *Maps and Navigation* module (see the description of "Rescue Mission" in the next section). Tutorials limit interaction and decision making while delivering specific directions and information.

Exploratory

Simulation and game software represent the major portion of program offerings in the Exploratory category. Use of simulations and games to increase student understanding of science concepts represents an important area in computer software application in science. Simulations allow students to work with models of naturally occurring events that might otherwise be difficult to achieve for the following reasons. The event to be simulated is too remote, dangerous, time consuming, or expensive to experience directly. An additional reason might be to study theoretical situations not practical or possible with current technology.

Simulations allow students to make decisions, trying things out on a computer model without really affecting, for example, an ecosystem or endangering themselves or other organisms. They are allowed to study causal relationships among multiple variables in a compressed time frame, thus allowing for the active exploration of different strategies and solutions to problems, and observe their outcomes. Program examples include *The Voyage of the Mimi*'s "Ecosystems with Island Survivors," a computer simulation in ecology and "Rescue Mission" a navigation and sailing simulation at sea.

"Ecosystems with Island Survivors" is a two-part simulation. In the first part, students select eight species—four land and four pond organisms—to inhabit an island ecosystem. Students may also preset population levels. The second part has a game format in which students participate in an exciting adventure. Students attempt to survive for one year on the island, one month at a time. Students may gather plants, hunt, fish, build a shelter, or gather firewood each month. Their actions have a direct effect on the island's food web and survival is dependent on wise decision making.

In "Rescue Mission," students work in teams as crew members of a ship and are summoned to aid a fishing trawler which has accidentally caught a humpback whale in its nets. Students can "call up" and utilize a number of different navigational instruments—a pair of binoculars, radar, and radio direction finder to aid in the search. They also motor around a simulated ocean. To reach the whale, students must make decisions based on the ever-changing data from the computer, as well as apply different mathematical and map reading concepts. During the simulation, students work as a team making decisions, solving problems, and planning strategies for upcoming moves (2-3 students per team and up to four teams).

The decision-making process is one area where care must be exercised in using simulations. Simulations may be viewed as laboratory experiences and prelab preparation is necessary for a successful experience. Simulations can become guessing games if students have not successfully prepared themselves for effective decision making.

Computers as Laboratory Tools

Many science laboratory experiences involve the collection of data. With appropriate microcomputer interfaces, data can be collected and organized into tabular or graphic form for student analysis.

The data capture is made possible by various transducers or sensors that can detect changes in a variety of data types. Available commercially are transducers to measure changes in temperature, pressure, pH, light intensity, sound intensity, and so on. For example, temperature sensors, based upon changes in electrical resistance with temperature, are available from a variety of sources (such as Human Resources Media [HRM]).

One caution in using a computer to collect and organize data. The computer's role is one of facilitation of data collection and presentation, not one of eliminating a student's experience in this area.

One of the most important tool-use areas to be considered is the area of communication. Students can improve their effective thinking and processing skills in science through the use of word processing, database, and spreadsheet programs. Microsoft Works and ClarisWorks represent integrated packages, that is, a program that combines word processing, database, spreadsheet, and drawing programs in one interactive program. Word processing, database, and spreadsheet are defined as follows:

Word Processing

Word processors allow the computer to be used to enter and store text. Mistakes are easily corrected. Words, sentences, and paragraphs may be added, changed, moved, or copied. All may also be deleted. The document to be printed may be formatted then before it is actually sent to a printer. Spelling and, in some cases, grammar can be checked and the document may be stored on a floppy disk for later editing, revision, and printing. Student science reports and data can be written, organized, and printed using a word processing program.

Database

A database management program (DMP) is used to store and retrieve data in a variety of ways. A DMP allows a user to build a file of related records called a database. Each *record* is made up of a series of *fields*. An example would be a database for your class. Each record includes specific information about each student. See the sample record structure below:

Record - (one student)	Last Name	First Name		Phone (home)
	Street	City	Zip	Birthday

Once a database is created it may be organized alphabetically or numerically for specific fields (e.g., last name). Information can be edited or revised easily, records may be added or deleted, and the database can be formatted for printing reports or mailing labels.

An example of a database in science is Scholastic's "Weather and Climate Lab." A database of weather and climate information is included for a NOAA station in Michigan for a specific period of time. The fields included in this database are included in Figure 1.

Figure 1

Location
Month
Day
Time
Sky Cover
Ceiling Height
Dry Bulb Reading
Wet Bulb Reading
Dew Point
Relative Humidity (%)
Wind Direction
Wind Velocity
Precipitation Amount
Precipitation Form
Barometer Reading

Spreadsheets

A spreadsheet program is

- a large on-screen computerized worksheet, resembling a chart or ledger sheet.
- made up of many rows and columns with thousands of cells.
- an electronic chart in which mathematical data can be organized and manipulated.
- a decision-making tool, helping the user both define problems and experiment with different solutions.

There are several reasons for using a spreadsheet program with your students: It encourages logical thinking, promotes organizational skills, encourages problem-solving skills, sets the stage for experimentation, enables pupils to view a problem in general as well as in specific terms, makes algebraic concepts concrete, gives students a new interest in math, familiarizes students with a real-life business tool, and encourages student-adult interaction.

Figure 2
Sample Spreadsheet

	Test 1	Test 2	Test 3	Average
Artley, Michael	94	100	97	97
Brandeau, Michelle	92	93	91	92
Harren, Paul	83	85	87	85
McCready, Judy	75	82	89	82
O'Leary, James	98	85	90	91

Once data is entered, mathematical formulas may be applied in specific cells. *Example:* A formula for calculating the average for each student may be applied in each of the cells in the last column (see Figure 2). *A caution:* Spreadsheets can be quite complex and the model may be too difficult for students to understand unless they are already familiar with computer operations, editing, data types, constants, variables, functions, and output.

Interactive Media

CD ROM

The CD ROM exemplifies the high level of student interaction that can be achieved with computer software. The large storage capacity of CDs allows the user to move from basic information about a topic to glossary definitions of technical terms, to historical representations of the topic, detailed technical drawings, and short motion picture examples. The learner has control of the information that she or he needs to investigate a topic simply by pointing and clicking with a mouse.

An excellent example of this is the CD-ROM entitled *The Way Things Work* which is based on David Macaulay's best-selling book by the same title. This example includes over 1,500 screens of illustrated fact-packed information about the workings of almost every machine imaginable. The cross-linked information includes an inventor's workshop where the student can examine individual machines, their history, the principles of science behind each machine, inventor information, and short-animated "home movies" starring Macaulay's Great Woolly Mammoth. See the bibliographic information for this CD-ROM and others in the WIU Science Education Center's collection on page 6 of these Supplementary Materials.

Videodiscs

In the past, films or videos have been formatted for tape for replay on VCRs. Recently, many video topics have been reformatted for videodisc. The advantage is that the user can access the information on the disc in any sequence they wish very rapidly. Many videodiscs come with printed bar codes for rapid access of still pictures or movie segments and still others may be accessed through computer commands in a programmed sequence. The College of Education and Human Services has several videodisc examples available in the computer lab including *The Voyage of the Mimi* series.

Information Networks

Telecommunications Networks

By adding a modem to your computer there are a whole array of information sources that can be tapped including established networks such as the National Geographic Society Kids Network (NGS Kids Network) and information sites that can be accessed using the Internet.

The NGS Kids Network allows students to conduct original scientific investigations with children around the world. They record data on the computer, share findings (via the modem) with research teammates in the United States and other countries and get advice and assistance from participating professional scientists. The NGS Kids Network teaches real-world scientific procedures; transforms the computer into a powerful interactive communications tool; actively involves students in collaborative problem solving; and expands students' cultural, social, and environmental awareness. The NGS Kids Network software includes the following programs: "Hello!"—this unit introduces students to scientific research methods, telecommunications, and the computer tools used by scientists; and "What's in Our Water?"—this unit helps students trace their own water supply and develop some analysis techniques for determining water quality. Other titles include "Solar Energy," "What Are We Eating?," "Too Much Trash?," and "Weather in Action."

Accessing the Internet allows students to explore a number of scientific databases and information sites. A partial list of Internet services includes electronic mail, bulletin boards, file transfer, remote login, and index programs. Some of the science education resources available through Internet include Kidsnet WAIS kidsnet.src, ERIC Digests Archive WAIS ERIC-archive.src or WAIS ERIC-digest.src, Water Quality Education Materials WAIS water-quality.src, and Ask Mr. Science apscichs@radford.vak.12ed.edu

Print Media

It is very important not to forget the important role that books and other print media sources play in the information arena. The following represents a brief passage about humpback whales followed by a bibliography of children's books on the topic of whales. These materials are intended to support *The Voyage of the Mimi* program available in the WIU Science Education Center and the Horrabin Hall computer labs.

About Humpback Whales . . .

When Herman Melville wrote *Moby Dick*, he used these words to describe the humpback whale, "He is the most gamesome and lighthearted of all whales, making more gay foam and white water generally than any other of them." In this century, hunting has brought these playful rorquals right to the edge of doom.

The humpback seems to have gotten its name because of the unusual way it bends its back near its tail when making a dive. It is very different in many ways from other rorquals. For example, it is very husky, rather than streamlined.

It is not at all a fast swimmer, as the long, slim rorquals are. But it is considered a rorqual because it has the grooves of pleats on its underside.

Perhaps the most unusual physical feature of the humpback is its very long flippers. These can be up to 18 feet in length. In fact, the whale's scientific name translates as the "big-winged New Englander." Another unusual feature is a series of bumps or knobs on its head and flippers. Each bump has a bristle or two growing from it. Scientists believe the bumps may serve some special purpose in helping to sense or feel surroundings—much as a cat's whiskers do.

The humpback is the most playful, athletic, and even acrobatic, of the great whales. It has been seen to make all kinds of leaps. It will raise its huge body out of the water and flip itself over to splash on its back—and then do so again and again. It has even been seen to do somersaults in the water. At times, it will swim or lie on its side and slap its huge flippers playfully against the water. On a still day, the sound can be heard for many miles.

The humpbacks have a very complicated way of relating to one another. They have actually been seen to pat and "hug" each other with their long flippers. Either a male or female will rush to the aid of a mate that is hurt or in danger (whalers took advantage of this trait by wounding a whale and then killing those that came to its aid). The humpback feeds either on floating plankton or on small fish. A single adult will eat up to 3,000 pounds of food each day! The whale "herds" shrimp and small fish using air bubbles. When their food is concentrated, the humpback gulps down a huge amount of water, forces the water through its baleen, and swallows the food that is left behind.

To many experts, the most fascinating facts about the humpback whales have to do with the songs they sing. These are repeated songs, with the sounds and patterns and timing identical each time they are sung. They are very complicated—up to thirty minutes or longer. What's more, all the whales in a huge area sing the same songs and then change them the next year!

In the early 1800s, the humpback was the most widely hunted whale. Their size (up to 60 feet) and abundance of oil made them prized by whalers. Their slow swimming speed and friendly curious nature made them easy targets. Their pre-whaling population was estimated to be 300,000 worldwide. Today, there are probably fewer than 5,000 humpbacks remaining. They are currently protected, but their population has been slow to recover from decades of overhunting.

Vital Statistics: Speed: 6 mph
Birth size & weight: 14 feet, 4,000 pounds
Adult size & weight: 50 feet, 75,000 pounds
Life span: 45-50 years

Esbensen, B. J. (1994). *Baby whales drink milk.* New York: HarperCollins. Nonfiction. Describes the behavior of the humpback whale with an emphasis on the fact that it is a mammal and shares characteristics of other mammals.

Gibbons, G. (1991). *Whales.* New York: Holiday House. Nonfiction. Introduces the different kinds of whales.

Jeunesse, C., Delafosse, C., Fuhr, U., & Sautai, R. (1991). *Whales: A first discovery book.* New York: Scholastic. Nonfiction. Describes the physical characteristics and behavior of different kinds of whales.

Livingston, M. C. (1992). *If you ever meet a whale.* New York: Holiday House. Fiction. A collection of poems about whales.

McCloskey, R. (1963). *Burt Dow: Deep water man.* New York: Viking Press. Fiction. Burt Dow is a fisherman who catches a whale by the tail one day while fishing and Burt puts a band-aid on his tail. Soon, all of the whales in the sea want a band-aid on their tail.

McMillan, B. (1992). *Going on a whale watch.* New York: Scholastic. Nonfiction. Two six-year-olds on a whale watching expedition see different kinds of whales engaging in different kinds of behavior. Includes facts about each kind of whale.

Wells, R. E. (1993). *Is a blue whale the biggest thing there is?* Morton Grove, IL: Albert Whitman and Company. Nonfiction. Illustrates the concept of big, bigger, and biggest by comparing the physical measurements of such large things as a blue whale, a mountain, a star, and the universe.

WIU Science Education Center CD-ROM Collection

BodyWorks 4.0. (1995). Softkey International, Inc.
The interactive pathways of this program allows the user to investigate any part of the human body. More than 25 3-D models, 45 movies, 165 full-color illustrations, and hundreds of pronunciations are contained in this program.

Encyclopedia of science. (1995). Dorling Kindersley Publishing, Inc.
An interactive CD-ROM designed for children in grades 4 and up which explores Chemistry, Mathematics, Physics, Life Sciences, and the lives of scientists. This program includes over 1,700 visually stimulating entries, including more than 20 full-motion video sequences and 66 animations. An index links science, technology, and everyday applications.

RedShift. (1994). Maris Multimedia
RedShift is a multimedia program which enables the user to visualize the universe from any location. Using over 300,000 stars and galaxies, 700 full-screen color photographs, a Dictionary of Astronomy with 2,000 entries, and a Movie Recorder, students can create their own tour of the universe.

The ultimate human body. (1995). Dorling Kindersley Publishing, Inc.
Through the use of three interactive search paths—"The Body Machine," "The Body Organs," and "The Body Systems"—this CD-ROM explores and explains the functions of the human body. This program contains over 1,400 sounds and sound effects, over 90 animations, and more than 1,000 illustrations.

Voyager II - The dynamic sky simulator. (1994). Carina Software.
This astronomy program stimulates celestial phenomena of the past, present, and future. Displaying tens of thousands of stars, planets, galaxies, and constellations, the program allows the user to create unlimited nighttime skies. The accompanying CD-ROM contains hundreds of pictures of various celestial objects.

The way things work. (1994). Dorling Kindersley Publishing, Inc.
Based on David Macaulay's best selling book, *The Way Things Work*, this CD-ROM has over 1,500 screens and pop-up windows covering the greatest science discoveries from 7000 BC to the present. The 280 animations and 20 "mammoth movies" provide a wonderful information source for children of all ages.

What's the secret? (1994). 3M Learning Software.
What's the Secret? is the first of a series of interactive programs based on the popular television program "Newton's Apple." The user can explore the interconnections of science and nature while selecting their own pathways. This program also features puzzles to solve and activities to try.

World atlas. (1994). The Software Toolworks.
This multimedia atlas includes not only maps and charts, but over 1,000 color photographs from throughout the world and more than 150 video clips of major world cities' landmarks. Flags and national anthems from more than 200 countries are also part of this program. The ability to print city maps for over 47 destinations is also a unique feature of *World Atlas.*

College of Education and Human Services
Western Illinois University
Macomb, Illinois

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Teaching Social Studies with Historic Landmarks

Dr. Robert H. Lombard & Dr. H. Robert Brady

Ameritech

WIU Western Illinois University

Tools for Teaching with Technology

The WIU Approach
to Integrating Technology
into Teacher Education

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Teaching Social Studies with Historic Landmarks

Dr. Robert H. Lombard and Dr. H. Robert Brady
Department of Elementary Education and Reading

Module Context

Course Description

SSED 365 - Methods of Teaching Elementary Social Studies. This course is designed to help the future teacher to become acquainted with the various methods and techniques in the field of social studies. The course requires junior standing or departmental permission.

Recommended Core Modules To Complete Prior to This One

As many modules as possible should be completed, but transfer students can enroll in the course and successfully complete the module with additional laboratory time.

Additional Courses Where Module Could Potentially Fit

SSED 339 - Secondary Social Science Methods
SSED 493 - Teaching Social Studies for Involvement: Simulation Games and Activities
SSED 494 - Teaching Social Studies for Environmental Understanding
SSED 495 - Teaching Social Studies for Global Understanding
SSED 496 - Teaching Social Studies for an Understanding of Legal Concepts

Other Relevant Student Characteristics

Students enrolled in the SSED 365 course are typically in their sophomore or early junior years. Many SSED 365 students are transfer students and may not have completed core modules prior to the start of the course.

Module Focus

Title of the Module

Teaching Social Studies with Historic Landmarks

Content Area of the Module

Heritage education in social studies/social science teaching methods course. See the syllabus included in the Supplementary Materials for details.

Description of the Module

This module engages students in the exploration of a community's heritage within a national context. Student groups in an elementary social studies methods class are paired with similar student groups at another institution. The overall task for each group is to develop a unit plan built upon the local history/heritage of their location. Students must collaborate across distances to complete the assigned unit as well as use multiple media to exchange information gleaned from their research of local history/geography.

Ameritech Student Outcome(s) Supported

- To evaluate and use communications technologies along with computers and multimedia to support the instructional process.
- To explore, evaluate, and integrate computer/technology-based materials with centralized databases which provide voice, text, and video information (i.e., Prodigy, Illinet, Internet).
- To identify resources for a wide array of academic subjects for elementary and secondary grade levels.
- To design and develop learning activities that integrate computing and communications technologies for students at different achievement levels, including gifted and those with disabilities, and for diverse cultural student populations.
- To identify or design creative uses of telecommunications which develop student skills in problem solving, decision making, data collection, self-paced instruction, research and communications.
- To use communications technologies to enhance personal and professional productivity.

Specific Module Objectives

Students will utilize appropriate communication/computer technology to collaboratively produce units of instruction with a heritage education theme. See the syllabus in the Supplementary Materials for content and other objectives.

Technology Competencies Developed Through the Module

Awareness

Students were able to explain the potential classroom uses of the following: telephone teleconferences, the Internet, and video-teleconferences.

Hands-On Experience

Students were able to utilize the following to develop classroom activities: videotaping segments, e-mail (including with experts), and still camera images (chemical and digital).

Skills Development

Students were able to teach others how to use the following in classrooms: the Internet (e.g., e-mail, Gopher, World Wide Web [WWW], and chat), word processing/page layout programs, presentation software, and appropriate media.

Module Contents

Teaching Strategies

Strategies include modeling the use of technology, leading large group activities, and facilitating small group project work.

Learning Strategies

Students participated in simulations, large group activities during class, small-group hands-on research, and communications with members at distant universities. They also used technology to prepare a final presentation.

Ways Students Will Demonstrate Competency/Assessment

The module resulted in the production of high quality instructional units. Improved attitudes toward technology and increased computer skills/confidence were documented. Students also demonstrated improved sense of the collective heritage, local history, and national contexts for local events.

Ways Students Will Learn How To Use Technology in Their Classrooms

Students in SSED are likely to utilize communications technology and heritage education as they teach their own pupils in their own classrooms.

Module Implementation

Print Materials Needed

- Sample heritage education unit/lesson plans from the National Park Service's "Teaching with Historic Places" program
- Selected readings from the National Park Service, ERIC ChESS, and the National Trust for Historic Preservation
- Materials from local and state agencies on historic sites
- Specific nomination documents from the National Register of Historic Places

Equipment/Technology Needed

- computers with e-mail and Internet capability
- video camcorders
- speakerphones
- video-conferencing equipment if available
- facsimile machines
- televisions and VCRs
- chemical and digital still cameras
- modems and LANs

Software or Other Electronic Media Needed

- e-mail
- word-processing
- floppy discs for computers/digital camera
- film
- videotapes
- presentation and graphics software (optional)

Other Resources Needed

Funds are needed for toll calls made to transmit facsimiles or for telephonic teleconferences.

Implementation Recommendations

This is an excellent module to engage students in technology and the actual "doing" of history/heritage education. It is important to structure interim assignments that require students to collaborate via technology links. Methods of Teaching Elementary Social Studies sections have been revised to accommodate this module.

Supplementary Materials

Heritage Education Unit Instructions

The assignment of this instructional unit aims at the main goals of the course as stated in the syllabus. This includes demonstration of your instruction planning abilities in the following areas: (1) Choosing and stating goals and objectives; (2) Examining and choosing appropriate instructional materials; (3) Constructing interesting and challenging lessons; (4) Integrating different lesson types into a reasonable sequence which comprise a well-organized and purposeful whole; and (5) Developing a systematic and valid means of student performance assessment. The unit will be evaluated on each of these general criteria. There are several units on reserve in the Main Library which may give you some ideas about putting a unit together. These units are merely samples; please don't look at them as being perfect in every way. You should also recall the structure of the units developed as part of the "Teaching with Historic Places" project and your critique of them.

Your group should choose a specific unit topic which could be taught in seven to ten days of actual instruction. Your group's unit may be built around one of the following areas for Quincy or Macomb:

- Nature of the community
- Transportation
- Economy
- Layering (Architectural or other by decade)
- Historical or economic connections
- Migration/immigration/displacement
- Residential/commercial relationships within the community/greater regional area

You may assume any situation you want to (e.g., elementary school or middle school, any ability level range, and so forth), JUST BE SURE THAT YOU STATE WHAT IT IS NEAR THE FRONT OF THE UNIT WRITE-UP. You may include some lessons or their revisions that you have already taught, so long as they fit in the unit and that the unit is substantially new. Similarly, you can use ideas for lessons that you might have acquired from other teachers or your peers, or from materials that you may have studied. Assume that you are setting aside at least a 20-45 minute teaching period per day for the duration of this unit.

The following components and characteristics should be built into the unit:

1. *Context*: The context in which you will be teaching this unit should be briefly explained. Assumptions about the school or students should be stated in this section. This should be done on a page separate from the rest of the unit.

2. *Unit Goals*: General goals should be stated for the unit. These can be either in the form of an organized list or in a narrative rationale statement. In any case, they should explain what the unit seeks to achieve, and why it is important. Goals related to Heritage Education should be specified.

3. *Daily Lessons*: Individual lessons (not necessarily corresponding to a day's length—a lesson can be intended for half an hour, or for two or three days) should contain the following:

    a. *Student Objectives*: Specific objectives of the lesson should be related logically to the goals. Across all of the lessons, some objectives should be cognitive and some affective; some should be lower-level cognitive and some higher-level cognitive. However, each lesson does not have to contain each kind.

    b. *Materials Needed*: The materials to be used in the lesson should be clearly explained. Materials like maps, photos, and documents needed for teaching about the two places must be attached. References to texts, pages, and so on, are needed, as are descriptions of films, simulations, pictures, and statistical data. In the latter two cases, the materials themselves should be included in the unit if possible.

    c. *Procedures*: The teaching procedures and student activities to be engaged in should be explained thoroughly and in such detail that a knowledgeable substitute teacher could take your plan and understand what is expected of teacher and students in order to accomplish the objectives. A clear opening and closing to the lesson should be part of the procedures.

    d. *Evaluation*: Include information about how you will evaluate the lesson and student learning.

4. Each lesson should be interesting, challenging, and congruent with the goals of the unit. You should attempt to build in "mind capture" elements in at least some of the lessons/activities.

5. In the unit, there should be clear examples of a variety of teaching techniques like concept teaching, empirical inquiry, and values education. These need not comprise separate lessons, but can be integrated and overlap within and across lessons if that is more suitable for your unit. Each group must include at least seven lessons. Lessons which must be present include the following:

    - A lesson which provides an orientation to the community
    - Lesson(s) which link the community to other places/times
    - Lesson(s) which compare/contrast
    - A concept lesson related to Heritage Education
    - An inquiry lesson
    - A lesson drawing upon children's literature

6. A range of materials should be used, including text materials and some other forms. You must include the use of one of the following in your unit: film, simulations, computer software, visual evidence, original source materials, statistical evidence, recordings, children's literature, and so forth. Extra credit will be given for the creative use of computers in your unit. Avoid lengthy reading assignments, especially of difficult materials—this is a common mistake of beginning teachers. Include materials which provide for a variety of student activity.

7. A student performance assessment plan must include one of the following:

    a. Option 1: Older Students

        1. Five objective test items to test for low-level factual understanding
        2. Five objective test items to test for higher-level factual abilities such as application and analysis
        3. An essay question which will enable the student to demonstrate his or her ability to utilize, to interpret, or to generalize from knowledge learned in the unit
        4. Some means, formal or informal, to assess one or more of your affective goals and objectives
        5. In addition to these specific items, include a grading key (indicating correct answers for the objective items) and a scoring grade or outline for the two essay questions

    b. Option 2: Younger Students

        1. Observation checklists to assess each of your cognitive/psychomotor objectives
        2. Some means, formal or informal, to assess one or more of your affective goals and objectives

    c. Option 3: An Alternative Assessment Plan—one which uses performance assessment, portfolios, and so on

YOU MUST ALSO INCLUDE a short description of how you would assign grades and how you would communicate to students the results of your assessment.

This assessment plan does not have to be restricted to a unit-end test—formative, diagnostic, and summative evaluation can all be used.

The criteria used for evaluating your unit plan are as follows:

1. Statement of Goals and Objectives (5 each for 20 points)
    a. Importance of goals
    b. Specificity of objectives
    c. Congruence of goals and objectives
    d. A variety in the levels of objectives
2. Materials (20 points)
    a. Imagination (5)
    b. Range and variety—to include required lessons (10)
    c. Completeness of description (5)
3. Teaching Procedures and Student Activities (4 each for 20 points)
    a. Imagination—variety of student activities used
    b. Congruence with goals and objectives
    c. Logic of sequence—organization
    d. Specificity—detail of explanation
    e. Interest-provoking potential
4. Assessment Plan (15 points total)
    a. Congruence of items with objectives
    b. Quality of the objective items—clarity, accuracy
    c. Quality of the essay questions and scoring guide—clarity
    d. Cognitive levels of objective items and essay questions
5. Mechanics (5 points)

The unit plan should be typed, single-spaced, and in good form. Plastic covers or folders are not necessary. DO NOT put your name on the front sheet; put it on the back of the last sheet of the plan so I will not know whose paper I am evaluating.

Tentative Course Syllabus for
Methods of Teaching Elementary Social Studies

Western Illinois University
SSED 365
Spring 1994

Course Meets: M, W 11:00 A.M.-12:15 P.M., HH 22
Instructor: Dr. Robert Lombard
Office: Horrabin Hall 52
Phone: Office: 298-1785 E-MAIL: mfrhliluxa.ecn.bgu.edu
Office Hours: Mon.- By Appointment in A.M., 1:00-2:30 P.M.; Tues.- 9:00-11:00 A.M. and 1:30-3:00 P.M.; Wed.- 8:30-11:00 A.M., and 1:00-3:00 P.M.; Thurs.- By appointment from 9:00-11:00 A.M. and 1:30-3:00 P.M.; Friday, and other times by appointment.

Catalog Description

Designed to help the future teacher to become acquainted with the various methods and techniques in the field of social studies. A grade of C is required of teacher education majors. Junior standing or departmental approval.

Textbooks

Welton, D. A., & Mallan, J. T. (1992). *Children and their world: Strategies for teaching social studies* (4th ed.). Boston: Houghton-Mifflin.

Eriksen, A., & Wintermute, M. (1983). *Students, structures, spaces: Activities in the built environment.* Menlo Park, CA: Addison-Wesley.

Computer Access

Students must have access to specific software on a computer. There are university operated laboratories available in Stipes, Morgan, Horrabin, and Knoblauch Halls. Labs are also located in residence halls. Running most applications in the labs will require you to have your own data diskette. You should also establish a student electronic mail account if you have not already done so.

Course Objectives

The overall objective of this course is to assist prospective teachers in expanding their personal competencies in planning, conducting, and evaluating instruction in elementary social studies. The assignments for this course are designed to accomplish this broad objective through readings, discussion, written assignments, and mini-lessons.

You also will, at the end of this course, be able to do the following:

1. Reflect upon the content and composition of the social studies.
2. Describe and distinguish between three different traditions regarding the goals of social studies education.
3. Articulate your own broad objectives for the social studies.
4. Describe the structure of the social science disciplines (e.g., generalizations, concepts, and methodology).
5. Select relevant concepts and generalizations for a given topic; develop activities and instruction that will assist children to understand these ideas at their own level.
6. Select, classify, and develop instructional objectives for concept, skill, inquiry, and value lessons using social studies content.

7. Organize social studies lessons which teach concepts, skills, inquiry, and approaches to value-laden social issues.

8. Peer teach one of the lessons developed in achieving objectives 4, 5, and 6 (one lesson should be a concept/skill lesson and the second should be an inquiry/values lesson).

9. Develop questions at various levels of the cognitive and affective taxonomies.

10. Develop a unit of instruction based upon a community that incorporates concept learning, inquiry, decision making, valuing, and participation.

11. Analyze historical records, photographs, buildings, and communities as a means to teach social studies.

12. Compare and contrast communities through the utilization of historical records, photographs, maps, buildings, and so on.

13. Construct teacher-made tests or other assessment/evaluation approaches reflecting a range of formats (e.g., objective items, essays, non-paper/pencil).

14. Familiarize yourself with the wide range of textbooks, curriculum projects, computer software, and media available to teach social studies.

15. Evaluate specimens of instructional materials for social studies instruction.

16. Describe, explain, justify, and incorporate traditional (e.g., history, geography) and nontraditional (e.g., multicultural, global, career, law-related education, and environmental dimensions) content into social studies instruction.

17. Utilize the following technologies/media while completing course requirements: personal computer, video camcorder, electronic mail, fax machines, and electronic/traditional photography.

18. Collaborate as part of a team developing a unit using the "Teaching with Historic Places" framework.

19. Evaluate the technologies involved with distance learning (e.g., Internet, interactive teleconferencing, and so on).

20. List and describe the various professional organizations and publications in the social studies.

Attendance and Participation

Students are expected to be at all class sessions and to have completed the necessary readings and activities prior to arriving at class. A high premium will be placed upon the interchange of creative ideas. Given the importance of interaction, the amount and constructive quality of class participation will be assessed in determining course grades.

One-eighth of the evaluation points are set aside for attendance and participation. These are not bonus points! Each absence will result in a deduction of five points from the total of those points. Two absences, for example, would result in a loss of ten points. Tardies and leaving early will also be penalized. You are expected to participate when present in the classroom and as a part of a collaborative team working on a project.

Given the proportion of your course grade that is based upon your attendance and participation during class sessions, you probably wish to know more about the manner in which this portion of your grade will be determined. Although the main portion of your syllabus describes how attendance will figure in your grade, there is not much said about participation. The following discussion used by Dr. S. Samuel Shermis at Purdue University may be useful in understanding how your participation grade will be determined.

The usual question about the participation portion of the grade is "How can anyone make objective judgments about something that is inherently so subjective?" The answer is that making judgments about participation is not as subjective as it seems. For instance, do you agree that participation in a discussion is better than no participation?

Do you agree that an active student who asks questions about a text reading or an instructor's comment is doing a better job than a passive one who does not understand and does not know that he or she does not understand? Do you agree that an answer with valid information is better than one with incorrect, confused understandings? Do you agree that an elaborated answer (i.e., one with more development of critical ideas) is better than a diminished, incomplete, or undeveloped one? Do you agree that a student who probes his or her own thinking and that of others (e.g., students, text, and the instructor) is doing a better job than one who does not?

The next question that is often asked in a discussion such as this is "What if the instructor does not accept a student's interpretation?" "Does this count against the student in a discussion?" The first approach to this question is "What does one mean by 'interpretation'?" Obviously different individuals, equally well-informed, may reach diverse and different understandings of a text, concept, or theory. Second, a better interpretation is one which is supported by better grounds. That is, a good interpretation is based upon better and more evidence and a more compelling, more logical argument. The critical question is not "Do you agree with me?" but, rather, "Do you explain your position persuasively?" As time goes on in the course, this particular philosophical position will be made more clear.

Course Requirements

In order to meet the course objectives, the following array of assignments must be completed. Specific instructions will be provided for each of these assignments later in the course. ALL WRITTEN ASSIGNMENTS ARE EXPECTED TO BE TYPED, PROOFREAD, PREPARED IN ACCORDANCE WITH APPROPRIATE FORM/STYLE, AND SUBMITTED ON THE DATE DUE! Requirements are as follow:

1. *Material Review*: Participants are expected to read and interact with relevant instructional materials. Participants will be asked to review and critique a set of instructional materials developed for the "Teaching with Historic Places" project. The written review will include an analysis and a reasoned discussion of the strengths and weaknesses of the materials. An additional handout will be provided which gives the specifics of this assignment.

2. *Social Studies Focused "Booktalk"*: Students will prepare a booktalk about a work of children's literature which in some way relates to the concept of place (e.g., historic building) and provide an overview of how the book could be used to build a social studies lesson.

3. *Creation of a Teaching Unit*: Creating teaching units is an important part of the professional lives of teachers. Consequently, course members will be given an opportunity to develop an instructional unit which integrates a wide variety of content, methods, skills, and values from the social studies. The finished two-week unit will be due near the end of the semester. This unit will be developed while you work as part of a collaborative team of students at WIU and at George Mason University in Virginia. Your unit will be built around one of the following areas: (1) Macomb, Illinois, or (2) Quincy, Illinois. Your counterparts in Virginia will be building units around (1) the Clarendon section of Arlington, Virginia, and (2) Georgetown in Washington, DC. You will be communicating with George Mason students and outside experts via the Internet. Interim and final products will be shared via interactive television at several points during the semester. Specific instructions will be provided on a separate handout.

4. *Social Studies Content Quizzes*: Two quizzes will be given during the semester. These quizzes will evaluate student knowledge of both U.S. and world geography as well as the social science content covered in class.

5. *Examinations*: There will be two examinations in accordance with the schedule included in this syllabus. Each of these examinations will carry equal weight. The midterm will be an essay examination.

6. *Microlessons (Peer teaching)*: During the semester you will develop four types of social studies lessons and you will teach one of them to your peers. These lessons will be videotaped and you will submit a written critique of your performances after you view the tape. The four lesson types are (1) skills, (2) concept, (3) inquiry, and (4) values. Detailed instructions will be provided during the semester.

7. *Reaction Papers*: Each of you will be asked to respond to four issues in a three-to-four page paper on each topic.

Evaluation

Evaluation of each assignment will be done on a mastery basis. That is, students will be able to resubmit work until the instructor is satisfied with the quality and completeness of the work. A 10% PENALTY WILL BE ASSESSED AGAINST LATE ASSIGNMENTS!

Evaluations for this course will be based upon the following weights for the requirements described above:

Attendance and participation	50 points
Instructional Material Review	30 points
Social studies focused booktalk	30 points
Unit Lesson Plan	80 points
Social Studies content quizzes	60 points
Examinations	70 points
Microlessons	40 points
Reaction papers	40 points
TOTAL	400 points

Grades will be based on the following scale:

A = 368 points
B = 328 points
C = 288 points
D = 248 points

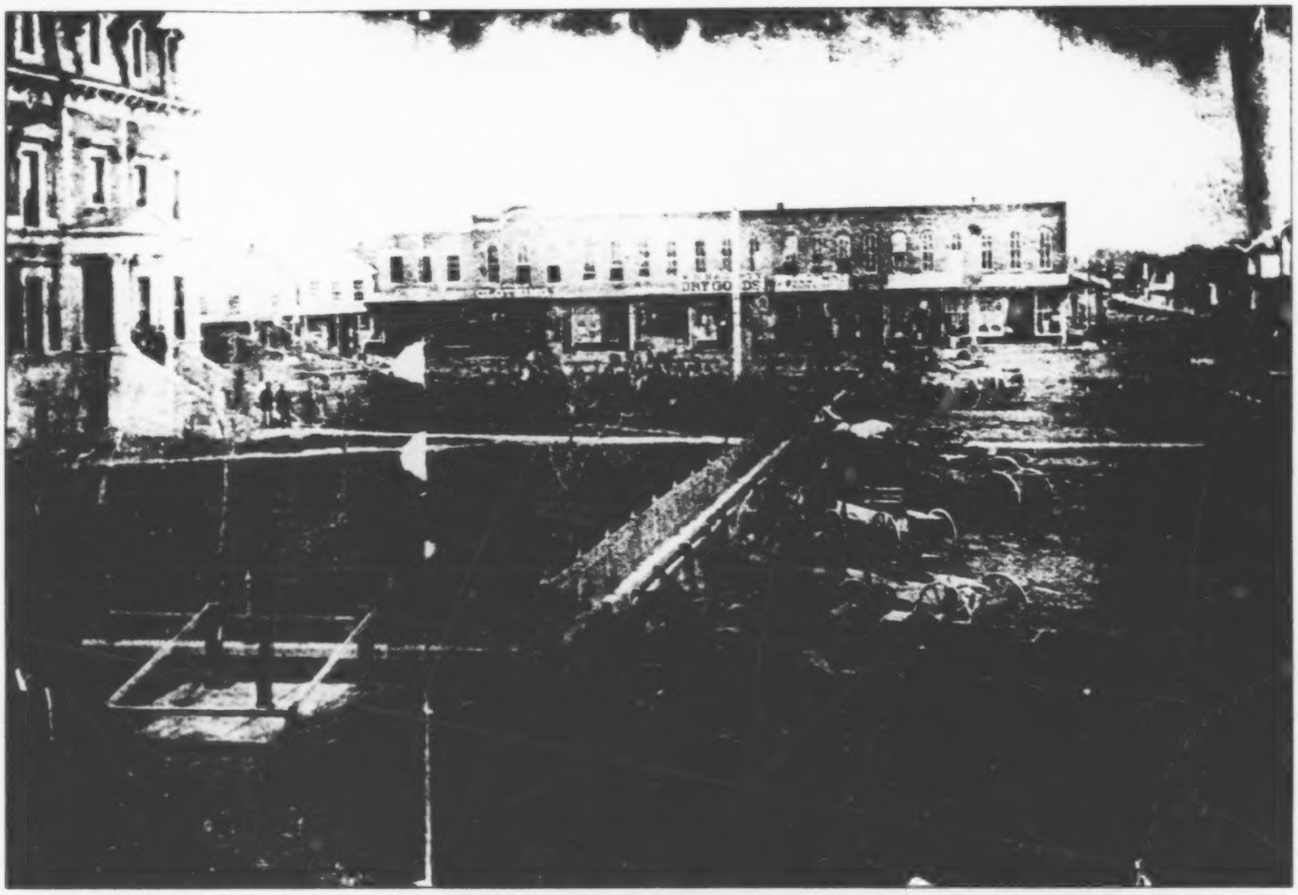
Tentative Class Schedule and Topics

January 19	Introduction to Class and the Social Studies Social studies as you remember it	* Syllabus * ASSIGN REACTION #1: Educational Autobiography ** WM, Prologue
January 24	Overview of Elementary Social Studies Essentials of the Social Studies	** WM, Ch. 1 & 2. ** REACTION PAPER #1: Educational Autobiography
January 26	Traditions and Current Trends in Social Studies	** WM, Ch. 3 & 4. ** Distributed reading
January 31	Concepts in the Social Studies	* Unit Plan Handout ** WM, Ch. 6.; EW, Tuning into the Environment ** uxa address/account established
February 2	Skills in the Social Studies	* Materials Review Handout ** Read WM, Ch. 7; Scan WM, Chs. 10-12 ** EW, People Spaces ** Distributed reading: Historic Places
February 7	Teaching with Historic Places	** EW, The Community Where You Live
February 9	Setting Goals/Objectives Questions and the social studies	** WM, Ch. 8.; App. D and E ** Quiz #1
February 14	OPEN, TBA	** REACTION PAPER #2: Historic Places, Social Studies, and ????
February 16	TBA	** WM, Ch. 10, 11, & 12 * Distributed reading ** Materials Review due
February 21	Evaluation and Assessment	** Concept & Skill Microplans due ** WM, Ch. 9 ** Distributed reading

February 23	Macomb Group Field Trip, I	* Mid-Term Review Sheet
February 25	Quincy Group Field Trip, I & II	* Mid-Term Review Sheet
February 28	Macomb Group Field Trip, II	
March 2	Concept/Skill Microlessons	
March 7	Concept/Skill Microlessons (Cont'd.) Mid-Term Review & Evaluation	
March 9	Mid-Term Examination	**REACTION PAPERS
March 21	Critique of Mid-Term Examination	**WM, Ch. 15
March 23	Inquiry in the Social Studies	
March 28	Inquiry/Values in the Social Studies	**WM, Ch. 5 & App. E
March 30	Values in the Social Studies	**Distributed reading **Software Review due **Inquiry/Values Microplans due
April 4	Using Media/Materials in the Social Studies	**WM, Ch. 15
April 6	Inquiry/Values Microlessons	
April 11	Inquiry/Values Microlessons Debrief Microlessons	**REACTION PAPER #3: TBA
April 13	Social Studies and Children's Literature Selling Social Studies with Children's Literature	* Student Booktalks
April 18	OPEN	
April 20	Decision Making Role playing/simulations in the Social Studies	**Quiz #2
April 25	Decisions, Decisions! Managing Group Dynamics	**Materials Review due **WM, Ch. 13 & 14
April 27	Booktalks	**Unit Plan due
May 2	Issues in Social Education	**WM, Epilogue **Distributed reading **REACTION PAPER #4: TBA
May 4	Final Review - Course Evaluation	
Exam Week	Exam May 9-13th per Schedule	

LIFE IN THE PAST LANE

Illinois, Virginia, and the Information Superhighway



Historic photos like this one of the square in Macomb served as a valuable resource for social studies methods students. Maps, drawings, city directories, and newspapers also have a lot to tell about a community's history. (Photo courtesy Western Illinois University Archives and Special Collections)

Preservationists and teachers long ago discovered that heritage education engages students and community members in powerful ways. With recent advances in computer technology, history teachers have begun to look for new routes to the past by traveling the information superhighway. Since numerous national studies and reports have underscored deficiencies in the teaching and learning of American history, we believed that the new connections made by the heritage education curriculum and computer technology could improve the social studies preparation of preservice elementary teachers.

Students use the newest technology to travel the information highway to the past. (Photo courtesy Visual Production, Western Illinois University)

Heritage education is a fresh approach to social studies that encourages people of all ages to learn more about their history and culture. It incorporates information from many fields of study, including history, geography, economics, archaeology, anthropology, sociology, science and technology, the arts, literature, and theater. Research, observation, analysis, and interpretation lead students to a greater understanding of themes, issues, events, and people that have shaped our collective memory. Heritage education allows students to explore, investigate, and discover connections between classroom knowl-

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Students at George Mason University in Fairfax, Virginia, shared research findings with students at Western Illinois University in Macomb. Photographs like this one of a commercial building in Alexandria were used to make comparisons with a commercial center in Illinois. "Teaching with Historic Places" is a new curriculum designed to provide students with the broad scope of American history–one that reaches beyond the local and regional level. (Photo courtesy Social Studies Methods students, George Mason University)

edge and the history they see around them. Preservationists advocate heritage education as a means to develop a preservation ethic in tomorrow's leaders.

Linking heritage education and information technology is the aim of an exciting collaboration between the National Park Service's National Register of Historic Places and the National Trust for Historic Preservation. Like other successful history programs around the nation, the "Teaching with Historic Places" heritage education program serves as a vehicle for teachers to tell wonderful histories and create intriguing, personal connections with students. Funding for the projects came from the National Trust for Historic Preservation and the CommTech Project funded at Western Illinois University by Ameritech.

While the use of nearby historic places, architectural tours, and museum programs has been a part of successful teaching repertoires for some time, recent communication technologies have expanded the ways in which to share the stories that places tell. In Illinois, the "Teaching with Historic Places" program involved the use of technology to link local resources with those of the Illinois Historic Preservation Agency, the National Register of Historic Places, the National Trust for Historic Preservation, and the Illinois Regional Archives Depository system. Long-distance collaboration among these agencies allows students and teachers to explore our heritage by examining locations as primary sources.

During the 1994 spring semester, two classes of preservice social studies methods students at distant universities—Western Illinois University in Macomb and George Mason University in Fairfax, Virginia—collaborated on the development of teaching units based on local historic places. Students at both universities formed small groups to develop two-week unit plans on heritage education. Each group worked with its counterpart to share information about each location; students then integrated those comparisons into the lesson plan. Additionally, student groups were assigned to either a "river town" or a "commercial center," and their task was to compare and contrast the towns. Students working on a Macomb, Illinois, unit worked with students assigned to the Clarendon section of Arlington, Virginia, as two examples of commercial centers. River towns paired in the project were Quincy, Illinois, and Georgetown in the District of Columbia.

Meanwhile, faculty from the two universities exchanged visits to explore

"TEACHING WITH HISTORIC PLACES"

"Teaching with Historic Places" is a social studies curriculum developed by the National Register of Historic Places division (or section) of the National Park Service and the National Trust for Historic Preservation. The program utilizes locations as three-dimensional documents for teaching our heritage. The project has produced a series of lesson plans that have appeared in the National Council for the Social Studies journal *Social Education*. These lessons and future "Teaching with Historic Places" classroom materials are based on, "Teaching with historic places: A curriculum framework for professional training and development of teachers, preservationists, and museum and site interpreters," by Charles S. White and Kathleen A. Hunter. That publication is available through Preservation Press.

the four sites and coordinate with agencies in Springfield and Washington, D.C. The commercial center communities permitted the classes to explore the larger idea of communities as gathering places and to determine how social and economic forces have altered downtown areas. Similarly, the river towns provided chances to explore early riverside economic centers and their growth within the national context.

Successful completion of the unit plans required frequent communication and collaboration of the teams from Illinois and Virginia. Students' collaborative tasks included:

1. Sharing what was known, not known, and needed to be known about each other's site;
2. Identifying common social studies concepts and generalizations;
3. Sharing ideas about locating primary source material for their sites;
4. Getting feedback on effective application of social studies methods in planning lessons;
5. Locating other historical places to which they could generalize the results of their inquiry; and
6. Exploring presentation ideas.

This collaboration was accomplished through electronic mail (e-mail), the use of listservers on the Internet (e-mail sent to a list is received by all subscribers), facsimile (fax) transmission of maps and photos, telephone conference with speaker phones, and regular mail services. Students also utilized video camcorders, still cameras, and computers to record information about the four sites.

Each of these communications methods was used to contact the preservation experts at the Illinois Historic Preservation Agency, the National Register of Historic Places, the National Trust for Historic Preservation, as well as the Gardner Museum of Architecture and Design in Quincy, Illinois. It

Teachers and students involved with heritage education along the information superhighway will find themselves immersed in instructional resources. Drawings, photographs, city maps, directories, newspapers, members of the community, and even buildings can prompt students to inquire about their own locale or another. Connections with other communities and resources can be explored via Internet connections, electronic mail, fax, telephone, and other forms of telecommunications. As students interact with community resources as well as with experts from the "virtual" preservation community–including the preservation community on the electronic superhighway–they have the opportunity to construct the history of their town within national or international contexts. This may result in discoveries that link individual communities to the grand events found in textbooks.

(Above photos courtesy Visual Production, Western Illinois University)

would not have been possible for the students to gather the information they needed without the cooperation of these agencies or others. The Western Illinois University Archives and Special Collections section of the WIU Library (part of the Illinois Regional Archives Depository system) was especially helpful in acquiring needed photographs, maps, and other documents.

It was interesting to watch as students who began research as "reluctant historians" became enthusiasts as they found the work engaging and connected to their own experiences. Students completed questionnaires about computer use and heritage education at the start and end of the courses. Among the changes noted during the course were the students' increased comfort with new communications technologies. Students also changed their views of heritage education. Their initial views of heritage education focused on individual heritage (e.g., our family is from Ireland), but their attitudes at the end of their study reflected changes to a community focus.

The project clearly demonstrated that today's communication technologies can connect the preservation and education communities in heritage education partnerships. While this project involved university students, the same techniques could be used in public schools or museums. Collaborations like these utilize the engaging power of heritage education to personally involve students with history and their communities.

H. Robert Brady
Robert H. Lombard
Charles S. White

H. Robert Brady is Assistant Professor of Social Science Education at Western Illinois University. Robert H. Lombard is Associate Professor of Social Science Education at Western Illinois University. Charles S. White, Associate Professor of Social Studies Education at Boston University, held a similar position at George Mason University, Fairfax, Virginia, when this project began. The authors initiated the project as a result of their activities with the National Council for the Social Studies.

STATEWIDE PLAN TO BE AVAILABLE

The Division of Preservation Services of the Historic Preservation Agency is preparing the state's first-ever statewide comprehensive historic preservation plan. A draft version of the plan will be available for public review and comment in early June. Persons wishing to receive a copy may obtain one simply by sending their name and address to the Illinois Historic Preservation Agency.

The plan, which is a requirement of state and federal law, outlines Illinois' cultural resources, the threats and opportunities confronting them and the goals and objectives that may be pursued in order to assure appropriate treatment of the resources.

The plan is not intended to serve as a strategy for the Division of Preservation Services, but rather to evaluate the planning and policy environment in which the state's cultural resources exist and will take into account much more than what the Division plans to do. Because of its broad application, the plan will be of interest to all local governments, planning agencies, and citizens. If you wish to receive a free copy of the plan, call the Historic Preservation Agency at 217-785-4512, or write to the following address:

Ted Hild
Illinois Historic Preservation Agency
1 Old State Capitol Plaza
Springfield, IL 62701-1507

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College of Education and Human Services
Western Illinois University
Macomb, Illinois

1996

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The Governor's Ameritech EdTech Grant

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Electronic Resources for Teaching Secondary Social Studies

Dr. F. Gene Miller

Ameritech

wiu Western Illinois University

Tools for Teaching with Technology

The WIU Approach
to Integrating Technology
into Teacher Education

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Electronic Resources for Teaching Secondary Social Studies

Dr. F. Gene Miller, Department of Elementary Education and Reading

Module Context

Course Description

This module is designed for students in a methods course who are seeking certification to teach history, geography, political science, psychology, or sociology in the secondary school. The course deals with the following themes:

- Why we teach social studies (goals and objectives)
- What we teach in social studies (content and organization)
- How we teach social studies (techniques and materials)
- How we tell what we have taught (evaluation)

Course Prerequisites

Upper division standing in a secondary teacher education program in history, geography, political science, psychology, or sociology

Recommended Core Modules To Complete Prior to This One

No prerequisite skills are required. Some familiarity with locating Internet sites is helpful, but students have successfully completed the module without such prior experience.

Additional Courses Where Module Could Potentially Fit

With slight modification it can fit any teacher education course in which Internet resources might be helpful.

Other Relevant Student Characteristics

Teacher education students

Module Focus

Title of the Module

Electronic Resources for Teaching Secondary Social Studies

Content Area of the Module

Electronic resources to enhance learning in secondary social studies classes: history, geography, political science, psychology, or sociology

Description of the Module

Students complete the following activities for this assignment:

Part I

Find and print out a lesson that they can adapt for their own teaching.

Part II

Give the source (electronic address) and a brief description of one Internet site or file in eight different categories of information.

Part III

Identify the site or file they have found that appears to be the most useful for their teaching and explain how they might use the information from this resource in their teaching.

Ameritech Student Outcome(s) Supported

- To evaluate and use communications technologies along with computers and multimedia to support the instructional process.
- To explore, evaluate, and integrate computer/technology-based materials with centralized databases which provide voice, text, and video information (e.g., Prodigy, Illinet, World Wide Web).
- To identify resources for a wide array of academic subjects for elementary and secondary grade levels.

- To use communications technologies to enhance personal and professional productivity.
- To identify resources for staying current in applications using communications technologies in education.

Specific Module Objectives

Students will be able to accomplish the following:

- Locate lessons on the Internet that may be adopted or adapted for their own teaching.
- Locate a variety of Internet sites that may provide resources for themselves or their students.
- Identify a particularly useful site and explain how they might use the information from this site in their teaching.

Technology Competencies Developed Through the Module

Awareness

Students will become aware of teaching resources available via the Internet.

Hands-On Experience

Students will learn how to utilize Internet navigation tools to locate appropriate resources.

Skills Development

Students will become proficient in the use of these navigation tools. They will learn to evaluate the appropriateness of various sites for teaching purposes.

Module Contents

Teaching Strategies

The instructor conducted an in-class demonstration of Netscape (Web browser) and provided guidance, as needed, on the out-of-class assignment.

Learning Strategies

Part I

Find a lesson that they can adapt for their own teaching. Print out the plan. Submit the plan and clearly identify its source (electronic address).

Part II

Give the source (electronic address) and a brief description of one Internet site or file in each of the following eight categories of information.

A site or file must . . .

1. specialize in some aspect of their social science major or minor (e.g., World War II archives).
2. contain government information (e.g., decisions of the U.S. Supreme Court).
3. have information about other countries or regions of the world (e.g., The National Clearinghouse for U.S.–Japan Studies).
4. represent a professional organization in social studies (e.g., NCSS).
5. have current news (e.g., TIME Daily News Summary).
6. provide information on educational television programs (e.g., The Discovery Channel).
7. have general education information (e.g., newsletter of the Northwest Regional Educational Lab).
8. be useful for finding other sites and files (e.g., Yahoo).

Part III

Identify the site or file they have found that appears to be the most useful for their teaching. Provide the electronic address of that site or file and explain in one page or less how they might use the information from this resource in their teaching.

Assessment

Students submit the "Electronic Resources" assignment. See attached Supplementary Materials for evaluation criteria.

Ways Students Will Learn How To Use Technology in Their Classrooms

The instructor highlights particularly interesting sites located by the students and discusses their potential classroom applications.

Module Implementation

Print Materials Needed

Electronic Resources handout

Equipment/Technology Needed

Computer with access to Internet

Software or Other Electronic Media Needed

Web browser

Other Resources Needed

None

Implementation Recommendations

- Those students who have never used the Internet may need some assistance and encouragement.

- Students are often overwhelmed by the amount of information available to them via the Internet. Some class time is needed to discuss how best to use this information in their own teaching and how best to have their students use the information available via the Internet.

Supplementary Materials

Electronic Resources

Good teachers are always looking for resources they can use to enhance the learning of their students. Effective teachers move beyond the textbook and use the text as only one of many class resources. They know that a variety of resources are critical to developing lessons that work with students.

Finding the best resources keeps teachers busy researching in the library and reading journals and newspapers. These activities are still useful, but a new dimension has been added to bring a treasure of potential resources right to the teacher's computer. The rapid expansion of the Internet and the tools to facilitate its use are bringing dramatic changes in the ability of a teacher to tap into a staggering amount of information. The challenge is how to find and use all this information. This assignment is designed as a partial answer to that challenge.

You are to complete the following activities for this assignment:

Part I

Find a lesson that you could adapt for your own teaching. Print out the plan. Submit the plan and clearly identify its source (electronic address).

Part II

For each of the following categories, give the source (electronic address) of one Internet site or file and a brief description of the site or file:

A site or file must . . .

- specialize in some aspect of your social science major or minor (e.g., World War II archives).
- contain government information (e.g., decisions of the U.S. Supreme Court).
- have information about other countries or regions of the world (e.g., The National Clearinghouse for U.S.–Japan Studies).
- represent a professional organization in social studies (e.g., NCSS).
- have current news (e.g., TIME Daily News Summary).
- provide information on educational television programs (e.g., The Discovery Channel).
- have general education information (e.g., newsletter of the Northwest Regional Educational Lab).
- be useful for finding other sites and files (e.g., Yahoo).

Part III

Identify the site or file you have found that appears to be the most useful for your teaching. Provide the electronic address of that site or file and explain in one page or less how you might use the information from this resource in your teaching.

The evaluation criteria is given below:

Name ______________________________

Electronic Resources

		Poor				Outstanding
1.	Appropriately selected lesson plan	1	2	3	4	5
2.	Correct electronic addresses	1	2	3	4	5
3.	Sites/files which fit categories given	1	2	3	4	5
4.	Clear and complete site/file descriptions	1	2	3	4	5
5.	Explanation of site/file as a teaching resource	1	2	3	4	5
6.	Overall quality	1	2	3	4	5

Points _____ out of 60 possible (total of the above times two)

Comments:

Sample Student Assignment

Electronic Resources Assignment

Part I

The lesson plan that I found was located at . . .

http://www.csun.edu/~hcedu013/index.html

Once at this site, I found the lesson plan via gopher. That address is . . .

gopher://ericir.syr.edu:70/11/Lesson/SocialStudies

The lesson plan that I found at this site is located at the end of this report.

Part II

The following numbers correspond to the eight categories that we were to locate on the Internet with one being the site that specializes in some aspect of our social science major or minor, and so forth.

1. http://www.uwin.siu.edu

   This is a site which specializes in an aspect of Geography. Specifically, it is the Universities Council on Water Resources. The most useful feature of this site is the listing of abstracts. You can search by topic. For example, I was looking for information concerning my thesis which is related to wastewater legislation. I typed that in and received a list of abstracts which were related to my subject query. The site also had useful links to other places. In what they call the Wetlist, numerous URLs are given which link you to other water-related pages.

2. http://earth1.epa.gov:80/OWOW/

   From the above Universities Council on Water Resources web page, I went through a link to the Office of Water which is a site maintained by the United States Environmental Protection Agency. Within this site, I was able to look at legislation pertaining to the National Pollutant Discharge Elimination System (NPDES). One of the documents I looked at was a most recent amendment to the Clean Water Act. The amendment appeared in summarized form, so even the layman (that's me) could make some sense about it.

3. http://www.yahoo.com/regional/countries/ukraine/

   This site had information about a foreign country. I found this site just by doing an Internet search on Ukraine in Infoseek. There were many interesting things about this site, including a facts page about the country, links to web pages which talked about the cities of Odessa and Kiev, the former having all kinds of interesting pictures of the city, and also software for decoding the Russian and Ukranian alphabets (which I didn't download).

   http://www-physics.mps.ohio-state.edu/~viznyuk/

   This was also a good site for viewing information about the former Soviet Union. There is a picture gallery which had some old photographs of Russia circa 1900, including the Nevsky Prospekt (which is the equivalent of the main drag or street) in St. Petersburg. It also had links to other sites including the TASS news agency. There was also an interview of Karl Marx by the *Chicago Tribune* that was written in 1893; it was not working properly, however, so I didn't get to read it.

4. A. http://www.indiana.edu/~ssdc/eric-chess.html
   B. http://ericir.syr.edu/

   This was an interesting site. I first went to A. which turned out to be the Social Studies Development Center at Indiana University. From there, via link, I went to an even more interesting site, B., which was an ERIC Virtual Library. I thought that this site was great. It had links to other education sites, lesson plans that you can search through and print out, and access to the Discovery Learning Community which is a joint project between ERIC, the Discovery Channel, and the Learning Channel.

5. http://www.trib.com/wire/tass/international/ DOES NOT WORK!!!!

   It used to work, when I did this portion of the assignment that is. The other site listed below, is a valid address, and was the starting point that I used to go to the TASS news agency. I cannot fathom why the link is no longer valid, but I am glad I checked it out before handing this assignment in!

   This site, which is actually a link from http://www.trib.com/, provided me with up-to-date (October 10th at the time) news on the former Soviet Union. TASS, which is the equivalent to UPI, the Associated Press, or Reuters, covers Russia and all of the former republics. I was able to print out several news articles which I took with me to a class I am taking called Russian Geography, so this assignment served two purposes. Trib.com is an Internet newspaper, but is affiliated with the Casper, Wyoming *Star-Tribune*.

6. http://www.discovery.com

   I was most displeased with this web page. I was expecting the same quality that is found on the television channel, but to my surprise, there were too many pictures on this web site, and not enough substance. There was one interesting item there, however; it is called the knapsack, and although it was not ready, it looked really sharp. The user will be able, once its up and running, to simply type in a key phrase he or she is interested in, and the knapsack will search the web to find sites that match the query. Come to think of it, the knapsack sounds a lot like Infoseek, or Lycos. At the time I was on this web page, it seemed a whole lot more interesting.

7. http://www.ed.gov

   This site certainly contains general education information. It is the Department of Education's web page. There is a complete listing of the Goals 2000 program located here, links to other sites, the teacher's guide to the Department of Education (which can be downloaded), information about applying for grants, and a publications page in which you can have a gander at everything the Department of Education publishes. Within the publications page I found a link to ERIC Digests which contained over 1,300 ERIC Digests that could be searched through.

8. http://lycos.cs.cmu.edu/

   One can search this Internet browser using keywords, or check out the Lycos 250 which is a hot list of what Lycos believes to be the best web sites on the Internet. Lycos claims to have surveyed 91% of all the web sites and for their hot list have broken those down into subject headings such as business, sports, entertainment, news, and even education. I clicked on the education and was not too impressed. It was mostly web pages for universities. Overall, though, I thought that Lycos was a pretty good Internet browser.

Part III

I did not find any sites specific to Geography that would be at all useful in my teaching. I am sure that there probably are web pages devoted to Geography that are good, but I have yet to find them.

Of the web pages that I was on, I feel that number four, http://www.indiana.edu/~ssdc/eric-chess.html, would be the most useful to my teaching. The Social Studies Development Center at Indiana University has put together an impressive web page. The links contained within their page are the most useful feature, and from IU one can go to various sites on the web, including such varied web sites as Art, Multi-Cultural Education, Economics, Area Studies, Geography, History, Government, General Social Studies (such as a link to the NCSS), and Education (U.S. Department of Education).

One link that I found most useful was to the ERIC Virtual Library. This was an interesting site which contained ERIC lesson plans, a searchable database, clearinghouses, and the Discovery Learning Community.

I found the Discovery Learning Community particularly interesting because it gives you a listing of what shows are going to be on that would be useful to tape and show in the classroom. The shows are broken down by education level. There are shows for Pre-School, Elementary, and Secondary School levels. Secondary was further broken down into subject areas, including Social Studies. You can find out about a particular show, when it is going to be aired, and even questions to ask the class about the show (answers to the questions are included also!).

I could keep babbling on about how neat I thought this site was, but I won't. I feel that this site could be most useful for my teaching because of the vast amount of teaching resources found here. There are ERIC lesson plans, a listing of all ERIC publications, AskERIC, links to other sites, the Discovery Learning Community, the National Library of Education, and links to other Social Science sites.

The information that I would be able to glean at this site is unfathomable. It would certainly help to keep me current in the field of teaching, and also supply me with creative ideas that I could use in the classroom. I could sample the lesson plans to adapt to my teaching; I could find out when a Discovery program was airing so I could tape it for use in my classroom; and I could also go to other sites like the NCSS, the U.S. Department of Education, or other related Social Science sites.

College of Education and Human Services
Western Illinois University
Macomb, Illinois

1996

Supported by
The Governor's Ameritech EdTech Grant

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Integrating Technology into Early Childhood Thematic Teaching

Dr. Kathy Barclay, Dr. Cecelia Benelli, and Dr. Jean Wolf

Ameritech
WIU Western Illinois University

Tools for Teaching with Technology

The WIU Approach
to Integrating Technology
into Teacher Education

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Integrating Technology into Early Childhood Thematic Teaching

Dr. Kathy Barclay, Dr. Cecelia Benelli, and Dr. Jean Wolf
Department of Elementary Education and Reading

Module Context

Course Description

ECH 475G - Best Practices for 3, 4, and 5 Year Olds. An introduction to developmentally appropriate curricular methods for teaching preschool-age children. The emphasis of the course is on thematic unit planning, the project approach, early literacy development, science/math experiences, child guidance, and parent-staff interactions.

Course Prerequisites

None

Recommended Core Modules To Complete Prior to This One

Using the Computer To Enhance Teacher Productivity

Additional Courses Where Module Could Potentially Fit

ECH 372 - Organization and Administration of Early Childhood Classrooms
ECH 471 - Methods of Teaching Language Arts for the Young Child
ECH 472 - Science/Math Methods
ECH 473 - Social Studies/Music/Art Methods
ECH 574 - Integrated Learning
Reading 365/569 - Early Childhood Reading

Other Relevant Student Characteristics

Preservice and inservice teachers in preschool, prekindergarten, kindergarten, and first grade classrooms

Module Focus

Title of the Module

Integrating Technology into Early Childhood Thematic Teaching

Content Area of the Module

Early childhood curriculum integration

Description of the Module

As students learn to design developmentally appropriate thematic units for teaching preschool-age children in this course, they must select and evaluate various technological tools and multimedia/software products. Then, they must find effective ways to integrate them into their thematic study.

Ameritech Student Outcome(s) Supported

- To evaluate and use communication technologies along with computers and multimedia to support the instructional process.
- To design and develop learning activities that integrate computing and communications technologies for students at different achievement levels, including gifted and those with disabilities, and for diverse cultural student populations.

Specific Module Objectives

- To introduce students to the concept of curriculum integration.
- To model methods for integrating technological and multimedia materials into various curricular areas.
- To acquaint students with a wide variety of resources, including technological and multimedia materials for use in thematic units designed for young children.
- To support students in the development of a thematic unit which integrates all components of the early childhood curriculum, including technology.

Technology Competencies Developed Through the Module

Awareness

Students will become acquainted with technological and multimedia resources available for inclusion in thematic units of study at the early childhood level.

Hands-On Experience

Students will use database searching to locate resources, will select and evaluate various computer software products, and will select and evaluate various multimedia products for use in a thematic study.

They will also select technological tools to fit content, learning objectives, and instructional and learning activities.

Skills Development

Students will share their thematic units of study with class members, demonstrating at least three computer software/multimedia products selected to fit the content, learning objectives, and instructional and learning activities.

Module Contents

Teaching Strategies

The instructor leads discussions pertaining to curriculum integration which models thematic webbing—a planning strategy for developing an integrated, thematic unit. The theme, "Castles, Kings, & Kingdoms," is used to demonstrate an integrated unit utilizing a variety of computer software and multimedia products, and learning activities that integrate computing and communications technologies for young children. Specific learning outcomes are identified for each curricular area, as well as for the development of computing and technological skills.

Learning Strategies

Using the thematic webbing strategy, students will work in small cooperative groups to develop an integrated, thematic unit which utilizes a variety of computer software and multimedia products. In order to accomplish this task, they will need to select and evaluate a variety of resources, and to design and develop learning activities that integrate computing and communications technologies for students at different developmental levels. Students will share their completed webs and activities with their classmates, demonstrating at least three different computer software and multimedia products.

Ways Students Will Demonstrate Competency/ Assessment

The students will turn in completed web and integrated thematic unit plans and learning outcomes. They will share their projects in class, demonstrating a minimum of three learning activities that integrate computer software and multimedia products.

Ways Students Will Learn How To Use Technology in Their Classrooms

The students will be developing integrated, thematic units that can be used in their future preservice/ inservice teaching. The computer software programs and multimedia used in their units will be ones that are appropriate for use by young children. The preservice teachers will state learning outcomes for each curricular area, as well as for computing and technological skills.

Module Implementation

Equipment/Technology Needed

Students need to have access to computers, CD-ROM drives, printers, and video monitors.

Software or Other Electronic Media Needed

Students need to have access to a variety of software programs and multimedia products designed for use in early childhood classrooms.

Implementation Recommendations

This module has been flexibly designed so as to allow for adaptation in a variety of courses. The sample integrated unit plan demonstrates for students how technology-related objectives and outcomes can be added to virtually any thematic unit of study. We have used the unit to model objectives and outcomes related primarily to language, literacy, and social studies. Objectives and outcomes related to other areas of the elementary curriculum such as science and mathematics could be added to this sample unit. Following discussion of the sample integrated unit plan, students could develop objectives, outcomes, and instructional activities for a theme or topic of their own choosing.

A variety of software is available to support this module. This software can be used to demonstrate the broad scope of software available for use with thematic units of study. Following these demonstrations, students can locate, preview, and demonstrate for the class appropriate software to support themes and topics of their own choosing.

Supplementary Materials

Course Syllabi Relating to Module

ECH 475G: Best Practices for 3, 4, and 5 Year Olds
Summer Semester, 1994
2 Semester Hours Credit

Dr. Kathy Barclay Dept. of ELED/RDG	Dr. Cecelia Benelli Dept. of ELED/RDG	Dr. Jean Wolf Dept. of ELED/RDG

Meets: 4:00-7:00 p.m., M, T, Th

Viewing Sites: Macomb, Springfield, Quad Cities

Course Description
An introduction to developmentally appropriate curricular methods for teaching preschool-age children. The emphasis of the course is on thematic unit planning, the project approach, early literacy development, science/math experiences, child guidance, and parent-staff interactions.

Required Texts
Beaty, J. (1992). *Preschool Appropriate Practice.* Fort Worth, TX: Harcourt Brace Jovanovich.

Bredekamp, S. (Ed.). (1987). *Developmentally Appropriate Practice in Early Childhood Programs Serving Children from Birth Through Age 8.* Washington, DC: National Association for the Education of Young Children Press.

Selected journal articles, handouts, and course study/application guides
(There is a $6.00 copy fee payable to WIU. Handouts will be available at the first class meeting.)

Recommended Texts
Katz, L. & Chard, S. (1989). *Engaging Children's Minds: The Project Approach.* Norwood, NJ: Ablex.

Krough, S. (1990). *The Integrated Early Childhood Curriculum.* New York: McGraw-Hill.

Saifer, S. (1990). *Practical Solutions to Practically Every Problem.* St. Paul, MN: Redleaf Press.

Wortham, S. (1993). *Early Childhood Curriculum.* New York: Merrill.

Objectives
- Students will be introduced to best practices for working with 3-, 4-, and 5-year-old children.
- Students will participate in the planning of a thematic unit which integrates best practices in early childhood curriculum.
- Students will be introduced to ways to use computer software and multimedia to support the instructional process.
- Students will be acquainted with a variety of resources, including technological and multimedia.
- Students will be introduced to implementation of the project approach with preschool-age children.
- Students will gain skills in the area of child guidance.
- Students will gain skills in interacting with parents.

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Attendance/Participation

Your attendance and ACTIVE participation is mandatory in order for this to be a successful experience for students at all sites. Your comments and questions are valued as an important element in this course. If there is a student in this class who has need for test-taking or notetaking accommodations due to a disability, please feel free to speak with the instructors.

Course Requirements

(PLEASE NOTE: ALL PROJECTS MUST BE TYPED, DOUBLE-SPACED.)

1. *Self-Study Survey of Developmentally Appropriate Practice.* Complete the attached survey and bring to the first class meeting. Include both a rating and comments, obstacles, and/or questions for each item.

    - Comments: Explanation of your current practice/beliefs, including justification/explanation for your rating of each item.

    - Obstacles: If an item is not fully achieved, explain reasons why.

    - Questions: Any questions you may have about this item.

    Evaluation Criteria: This survey is worth 30 points toward your final course grade. You are to turn in TWO COPIES of this paper. One copy will be returned to you, and one will remain in the instructors' files. Points will be awarded on the basis of completeness, clarity, and thoughtfulness of written comments/obstacles/questions.

2. *"Bring to Class" Assignments.* For class sessions two through eight, you are to bring to class an idea/activity to share with a small group of classmates. Each idea/activity should be written according to the attached example, and should state the developmentally appropriate practice(s) from either Part 4 or 5 to which it is related. Visual aids, while desirable, are not required. Please note that only the written paper is to be handed in.

    Evaluation Criteria: Each assignment is worth 10 points for a total of 70 points toward your final course grade. Assignments will be evaluated on completeness and clarity in conveying an idea/activity that accurately reflects the identified practice from Parts 4 or 5.

3. *Project.* In small groups, you will plan an integrated unit incorporating activities reflecting best practices in early childhood curriculum. Your unit should include (1) a web; (2) anticipated outcomes; (3) a description of how each of the learning centers (block, computer, manipulative/math, story, writing, art, music, science, dramatic play, large motor) will be utilized/enhanced to reflect your theme; (4) descriptions of at least three learning experiences designed to promote development in each of the following: literacy, math, and science; and (5) introductory and culminating activities for the unit.

    Evaluation Criteria: Each group is to turn in one copy of the completed unit plan. PLEASE NOTE THAT THIS COPY WILL NOT BE RETURNED; THEREFORE EACH GROUP MEMBER WILL NEED TO KEEP A COPY. The unit will be evaluated on completeness, thoroughness, and clarity of application of best practices in early childhood curriculum. Each group member will receive the same score. This project will be worth 75 points toward your final course grade.

    Due Date: Last class session.

4. *Project Sharing.* Each group will share their project during the last class session. A sampling of books, visuals, and materials to be used in the unit are required.

    Evaluation Criteria: This presentation will be evaluated on the basis of clarity and interest to your fellow class members. It will be worth 25 points toward your final course grade. Each group member will receive the same score.

5. *Final Exam.* As a final exam in this course, you are to complete a second copy of the self-study survey of developmentally appropriate practice, and then write a mini-paper (one to two pages, doublespaced) comparing and contrasting your responses to the two self-study surveys. On the self-study survey, you are to include both a rating and comments, obstacles, and/or questions for each item. In your mini-paper, you are to discuss whether or not your ratings have changed since you responded to the first survey, as well as reasons why they may or may not have changed. In addition, you are to discuss your plans for implementing what you have learned in this course in your own teaching/caregiving situation.

   Evaluation Criteria: This final exam is worth 50 points toward your final course grade. You are to turn in TWO COPIES of the survey and mini-paper, ALONG WITH A SELF-ADDRESSED, STAMPED ENVELOPE FOR RETURN MAILING. One copy will be returned to you, and one will remain in the instructors' files. Points will be awarded on the basis of completeness, clarity, and thoughtfulness of comments/obstacles/questions on the survey and on your mini-paper.

   Date Due: Last class session.

Grading Scale

Your final course grade will be based on the number of points you have earned on the course requirements discussed above. Final grades will be assigned as follows:

First Self-Study	30 points
Seven "Bring to Class" Assignments	70 points
Group Project	75 points
Group Presentation	25 points
Final Exam (Self-Study/Mini-Paper)	50 points
	250 total points

Grading Scale
225-250 = A (90%)
200-224 = B (80%)
175-199 = C (70%)
150-174 = D (60%)
below 150 = F

Topical Outline

Week One

Session One: Developmentally Appropriate Practice
(Reading assignment: *Developmentally Appropriate Practice in Early Childhood Programs Serving Children From Birth Through Age 8*)

Session Two: Integrated Learning
(Reading assignment: Beaty, Chapters 1, 2, 8, & 13; Handouts: "Off to a Good Start: Thematic Unit Planning"; "Beyond Turkeys, Santas, Snowmen, and Hearts")

Session Three: Literacy Development
(Reading assignment: Beaty, Chapters 6 & 7; Handout: "Scribbling to Real Writing: What Parents and Teachers of Young Children Should Know About Literacy Development")

Week Two

Session Four: Math and Science
(Reading assignment: Beaty, Chapters 3, 5, & 10)

Session Five: Integrated Learning and the Project Approach
(Reading assignment: Beaty, Chapters 8 & 11)

Session Six: Integrating Technology
(Reading assignment: Beaty, Chapter 4)
Project work group time

Week Three

Session Seven: Child Guidance
(Reading assignment: Beaty, Chapter 13)
Project work group time

Session Eight: Parent-Staff Interactions
Project work group time

Session Nine: Presentations of Projects

Reading 365: Reading in the Early Childhood Classroom
Fall Semester, 1994
Dr. Kathy H. Barclay

Course Description

Introduction to developmental reading, related skills, and techniques for teaching reading in the early childhood years.

Required Texts

Morrow, L. (1993). *Literacy Development in the Early Years.* Boston: Allyn & Bacon.

Schickedanz, J. (1986). *More Than ABC's: The Early Stages of Reading and Writing.* Washington, DC: National Association for the Education of Young Children Press.

Slaughter, J. P. (1993). *Beyond Storybooks: Young Children and the Shared Book Experience.* Newark, NJ: International Reading Association.

Eleanor, E. (1973). *The Hundred Dresses.* New York: Scholastic.

Selected journal articles and handouts prepared for Reading 365
(An $8.00 fee will be collected in class to cover costs of xeroxing.)

Purpose

The purpose of this course is to prepare the preservice teacher to teach reading from prereading to the comprehension of extended text. Central to this is the development of a thorough understanding of the reading process and the role of the classroom teacher in applying reading theory in the teaching of reading and related skills. Emphasis is placed on developmentally appropriate practices for children in preschool through third grade.

Objectives

Upon successful completion of this course, the student should be able to

- demonstrate an understanding of the reading process.
- promote factors that contribute to reading ability and enjoyment.
- foster young children's emerging literacy interests and abilities.
- offer varying types of prereading and beginning reading instruction that capitalize on the needs and abilities of the child.
- equip students with multiple skills to employ in determining the pronunciation and meanings of unknown words.
- integrate language and writing with reading instruction.
- deepen and expand students' vocabularies.
- adapt and supplement basal materials.
- equip students with multiple strategies for use in enhancing comprehension of a variety of print materials.
- provide appropriate instruction for students with special needs.
- implement literature-based reading lessons and activities.
- establish an appropriate perspective for oral/silent reading.
- establish an appropriate perspective for infusing multicultural literature throughout the program.
- integrate appropriate technology into the program.

Course Requirements

- *Class Attendance and Participation in All Activities.* Class preparation should include a careful, critical reading of assigned materials, so that we each bring our *questions* and *insights* to the class sessions. Your membership in this class through your reading, your writing, and your sharing is *valued* and *essential*. You will share this information with me in TWO ways:

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(1) *Reader Response Cards*: For each of the 15 assigned readings, you are to complete a 4 X 6 index card (no substitutions, please!) following this format:

Your Name: Date:
Title: (Name of article or book/chapters)
Source: (Journal or, in case of book, publisher)
Reactions: (Include the major ideas or understandings that you gained from this reading.)
Questions: (Add any questions you still have about this topic after reading this assigned piece . . . or something you "wonder about.")

These Reader Response Cards are due at the beginning of each class period and are worth 4 points each for a total of 60 points toward your final grade in this course.

(2) *Exit Cards*: At the end of each class period you are to take a few moments to fill out a 3 x 5 card with the following information:

Your Name: Date:
Something I learned today:

A question I have or something I wonder about as a result of today's class:

These cards are due at the end of each class session. THEY MAY NOT BE TURNED IN AT ANY OTHER TIME. They are worth 2 pts. each for a total of 40 points toward your final grade in this course.

Please Note: In accordance with the "no cut" policy that is in effect at WIU, you are to contact the Student Services Office should a serious injury, illness, or death in the immediate family cause you to miss class. That office will notify your instructor, asking that every consideration be given for you to make up any work missed. ONLY THOSE ABSENCES ACCOMPANIED BY SUCH A NOTICE WILL BE CONSIDERED EXCUSED.

- *Exams*. We will have a midterm and a final exam. These exams will be objective, computer-scored exams worth 100 points each. YOU WILL NEED A #2 PENCIL FOR EXAMS.

  Make-Up Exam Policy: Make-up exams are generally not given unless the student presents a written medical excuse or proof of a family emergency or some other major event. When at all possible, the instructor should be given advance notice of the student's inability to attend an exam. The make-up exam will be scheduled the day the student returns to class. Make-up exams will be of equivalent difficulty according to the judgment of the instructor, and may be in essay format.

  If there is any student taking this class who has a need for test-taking or notetaking accommodations due to a disability, please feel free to discuss this with the instructor.

- *Course Projects*. Present the following assignments when due. Late penalties may be applied for assignments not handed in by the due date.

  No assignments will be accepted after the graded assignments are returned in class, unless there is a serious emergency and Student Services contacts the instructor.

  (1) *Informal Assessment of Emergent Literacy Behaviors*: You will be assigned a child in the WIU Preschool classroom. Using the information provided in class, you are to visit the child in the Center for the purpose of conducting an informal assessment of the child's emergent literacy behaviors. You may need to visit with the child more than once to obtain the necessary information. You will then write what you did and what you found in formal report style (see example given in class) appropriate for dissemination to the preschool teachers and parents. 25 points

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(2) *Beginning Reading Unit Plan*: Develop a five-day plan for teaching children to read a predictable Big Book. Follow the procedures modeled in class and described on the handout/article provided in class. Your plan should include how you will introduce the Big Book, and specifically what you will do to teach the children to read it. You are also to include a variety of extension activities involving music, art, dramatic play, and writing. 50 points

(3) *Literacy Project*: Select one of the following options. (**Please Note:** Due to limited space, options one and two must be completed in a group of four to five.) All options are worth 50 points toward your final grade in this course.

OPTION ONE: Create a bulletin board display on reading on the bulletin board next to the Observation Booth for the WIU Infant & Preschool Center. The information conveyed through your bulletin board display should be appropriate for parents who want to know more about what they can do to support their young child's literacy development.

OPTION TWO: Create a display of children's literature based on a theme or author (NO seasonal or holiday themes) to present at Lincoln School during National Book Week. This option would require that at least two members of your group were available to SET UP AND DISCUSS your display at the school on Tuesday, Nov. 15 from approximately 9:30 to 10:45. Your display should include (1) at least fifteen books related to your chosen theme and be reflective of a variety of cultural and ethnic groups; (2) a backdrop for wall or table with an enticing caption and design to "advertise" your books to the children; and (3) concrete objects related to the theme and/or to specific books displayed.

OPTION THREE: Become a volunteer tutor for first-grade children. Students selecting this option will make arrangements with me to spend a minimum of TEN hours of time as a volunteer tutor at Wilson School. You will sign up in advance for dates/times to fulfill your tutoring responsibilities. Each time you arrive at the school, a teacher will assign a child to work with you (not always the same child/teacher) and tell you what to do. You may be listening to a child read, reading to or with a child, helping the child with written classwork, and so on. This is an opportunity for you to interact with first-grade children and teachers . . . and to gain a little experience helping first-grade children who are learning to read. *You are to acquire a spiral-bound notebook (70 page) in which you will record the following information for each ½ hour tutoring session*:

DATE: ______________________________ TIME: __________________

CHILD'S FIRST NAME: ____

WHAT WE DID:

WHAT I LEARNED FROM THIS SESSION:

(4) *"Novel" Unit Plan*: Either as an individual or with a group of up to five classmates, develop a ten-day unit plan for teaching reading through the use of a novel (chapter book) for grades second or third. I will supply the books for this assignment. *No other book selections will be accepted for this assignment. Please see addendum for specific requirements for this assignment, and for a sample of the format you are to follow.* 100 points

(5) *Basal Reading Unit*: With a group of three or four classmates, you will develop a five-day unit for teaching the basal selection distributed in class. You are to follow the Addendum for this assignment and the models included in your course packet. The majority of this assignment will be completed *DURING CLASS TIME*. 25 points

Academic Integrity

Good academic work must be based on honesty. The attempt of any student to present as his or her own work that which he or she has not produced is regarded by the faculty and administration as a serious offense. Students are considered to have cheated if they copy the work of another during an examination or turn in a paper or assignment written, in whole or in part, by someone else. Students are guilty of plagiarism, intentional or not, if they copy materials from books, magazines, or other sources without identifying and acknowledging them. Students guilty of, or assisting others in, either cheating or plagiarism on an assignment, quiz, or examination may receive a grade of F for the course involved and may be suspended from the university (taken from the WIU Faculty Handbook).

Evaluation

Each assignment will be awarded points based on criteria which fit the nature of the task. Written assignments are expected to reflect a level of literacy appropriate for a future teacher. Clarity of expression and proper use of the conventions of written English will be considered in the grading of written assignments. Errors in spelling, grammar, and/or punctuation WILL lower your grade. Points deducted will be as follows:

1-5 typos/errors = 2 pts., 6-10 typos/errors = 4 pts., more than 10 typos/errors = 10 pts.

ALL papers, WITH THE EXCEPTION OF THE EXAMS, must be typewritten and stapled (NO paper clips) once in the left-hand corner. Include a cover sheet and a blank sheet at the end for comments. Please do not use binders, folders, or covers of any kind.

For assignments receiving poor grades, the option to do the assignment over incorporating my comments into the revision may be considered. The final grade on the assignment will be the average of the two scores. This option must be discussed with me BEFORE you take any steps toward rewriting the assignment.

Grading

A total of 550 points can be earned in this course. The midterm and final exams are 100 points each for a total of 200 points. Course assignments are worth 350 points. You may wish to record the points you earn for each in the space below.

_____/100 = Midterm Exam
_____/60 = Reader Response Cards
_____/40 = Exit Cards
_____/25 = Emergent Literacy Inventory
_____/50 = Literacy Project
_____/50 = Big Book Unit Plan
_____/100 = Novel Unit Plan
_____/25 = Basal Unit Plan
_____/100 = Final Exam
_____/550 = TOTAL

Final course grades will be assigned as follows:

495-550 points = A (90%)
440-494 points = B (80%)
385-439 points = C (70%)
330-384 points = D (60%)
below 330 points = F

ECH 372: Organization and Administration of Early Childhood Classrooms
Spring 1995
Dr. Jean Maakestad Wolf

Required Texts

Bredekamp, S. (Ed.). (1987). *Developmentally Appropriate Practice in Early Childhood Programs Serving Children From Birth Through Age 8.* Washington, DC: National Association for the Education of Young Children Press.

Katz, L. G., & Ward, E. H. (1989). *Ethical Behavior in Early Childhood Education.* Washington, DC: National Association for the Education of Young Children Press.

Schwartz, S., & Pollishuke, M. (1991). *Creating the Child-Centered Classroom.* Katonah, NY: Richard Owens Publishing.

York, S. (1991). *Roots & Wings: Affirming Culture in Early Childhood Programs.* St. Paul, MN: Redleaf Press.

Packet of journal articles and handouts available in class for a small xeroxing fee.

Course Description

The course will focus on principles related to organization, housing, materials, curriculum, and activities of early childhood classrooms. Practical experience in a variety of early childhood classrooms is required.

Course Objectives

This course is designed to provide the student with

- an understanding of developmentally appropriate practice in curriculum decision-making, in organizing classrooms, and in planning programs for children three to eight years of age.
- self-reflection and self-evaluation skills towards becoming/being an early childhood professional.
- an understanding of affirming culture in the early childhood classroom.
- guidelines for planning and implementing quality learning experiences for young children.

Course Requirements

1. Regular ATTENDANCE and ACTIVE PARTICIPATION are both expected and required. After three absences, three points per class missed will be subtracted from the total points received for the course. Please sign-in daily on the attendance chart.

2. *Classroom Research Project—Individual/Group.* You, with members of your group, will observe, research, and become an expert on different classrooms for one specific age level of children. With your group, you will "teach" the rest of the class about classrooms for the specific age group. Details and guidelines will be discussed in class.

   Total points possible: 115 points

3. *Personal Philosophy of Education.* What you believe about teaching and about children is reflected in your teaching and interactions with children. By the end of the semester, you will have a working draft of your beliefs. Specific guidelines will be given and discussed in class.

   Total points possible: 65 points (20 points-1st draft/45 points-2nd draft)

4. *Teaching File.* Throughout your academic career, you will be collecting a myriad of sources and ideas for your future teaching career. This is an opportunity to design a system for collecting these resources in an organized

fashion. Please use materials from this course and other courses to create a minimum of eight separate topics/areas of teaching. The organization is important, not the extent of the material included. Suggestions and examples will be given in class.

Total possible points: 50 points

5. *Writing Assignments*. These are designed to help you develop reflective skills via writing. *Five* writing assignments are required based on topics given in class (see course schedule). One will be a group writing in class. These assignments are to be one to three pages long (they do not need to be typed) and points will be assigned based on thoughtfulness, completeness, and professional quality.

   Total possible points: 50 points (10 points per 5 writings)

6. *Response Paper*. One way to learn about teaching is to read teachers' accounts of their teaching. Read 25 pages of one of the books on reserve by author/teacher Vivian Paley. Write a reaction (typed, 3-5 pages) to her narrative in which she describes her understanding of herself, the children, and her teaching using the questions given in class. Points will be assigned based on thoughtfulness, completeness, clarity, and professional quality.

   Total possible points: 20 points

7. *Exams*. Two exams will be given during the semester to assess your understanding of material covered.

   Total possible points: 200 points (100 points per 2 exams)

8. *Final Exam*. The final exam will assess your understanding of course content and of the process of being/becoming a professional early childhood educator.

   Total possible points: 100 points

Please Note: Late assignments will NOT be accepted unless prior arrangements have been made or a written excuse from a doctor is provided. With prior arrangement, assignments will be accepted ONLY up to one week past the due date. Please anticipate conflicts and deadlines that will be problematic and discuss this with me in advance. Also, please notify me BEFORE AND AS SOON AS POSSIBLE in the event you are unable to take a scheduled exam.

Evaluations of course assignments will be based on completeness of assignments, thoughtfulness given to the tasks, clarity and expression of ideas, and the professional quality of the completed assignment. Points will be assigned based on the degree to which these conditions are met. ALL assignments are to be typed, except where noted.

If any student has need for test-taking or note-taking accommodations due to a disability, please bring this to my attention so that such arrangements may be made available.

Course Evaluation

Group/Individual Research Project	115 points
Personal Philosophy of Education	65 points
Teaching File	50 points
Writing Assignments	50 points
Response Paper	20 points
Semester Exams	200 points
Final Exam	100 points
	600 points

540-600 = A
480-539 = B
420-479 = C
360-419 = D
Below 360 and failure to meet course requirements will result in a failing grade.

	MONDAY	READINGS		WEDNESDAY	READINGS	DUE
			Jan 18	The beginnings		
Jan 23	The semester plan: Being/becoming a professional early childhood educator	On Reserve: Katz article NAEYC - p. 16	Jan 25	Appropriate . . . Philosophy guidelines	DAP: Pt. 1 R&W: Chs. 1 & 2	[W-I] Teacher want to be
Jan 30	Practice . . .	DAP: Pt. 3 P: Walsh/How children learn	Feb 1	Practice . . . Philosophy of Teaching	DAP: Pts. 4-6	
Feb 6	D. A. P.	DAP: Pt. 7	Feb 8	Professionalism	DAP: Pt. 8 P: Greenberg article	1st Draft Philosophy (2 copies)
Feb 13	NO CLASS		Feb 15	Review—Exam Teachers—begin	P: Feeney chapter P: Krogh chapter	[W-I] Peer review of philosophy
Feb 20	1st EXAM		Feb 22	Teachers	P: A changing world	[W-I] Reflective practitioner
Feb 27	Children	R&W: Ch. 7 P: Special needs P: All children are special	Mar 1	Communication	P: Let them speak! P: Do teachers communicate . . . P: Teacher . . . lang	
Mar 6	Content	P: Katz/What should children P: Emergent curr	Mar 8	Approaches	NAEYC guidelines	Paley response paper
Mar 20	Approaches	CCC: Chs. 1 & 5 R&W: Ch. 8 P: Multicultural sensitivity	Mar 22	Methods	P: Two Primary teachers learn and discover	
Mar 27	Planning	P: Webbing and planning info P: Grassroots curr	Mar 29	Review—Exam Technology and young children	P: Thoughts on technology	[W-G] (Mon) Activity review
Apr 3	Organization	P: General info	Apr 5	2nd EXAM		
Apr 10	Physical setting	R&W: Ch. 4 CCC: Ch. 2 P: Class walls . . .	Apr 12	Materials	P: Krogh chapter	Teaching File
Apr 17	Guidance	P: Approaches P: Praise or . . . P: Dealing with . . .	Apr 19	Social setting	P: Encouraging positive . . . P: General teach . . .	
Apr 24	Atmosphere	CCC: Ch. 4 P: A thing of beauty	Apr 26	Group presentations begin		Philosophy of teaching—final draft (2 copies)
May 1	Presentations continue		May 3	Presentations The endings: Being/becoming a professional		
FINAL EXAM WEDNESDAY, MAY 10—3:00 P.M.						

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Computer Software and Use of Computers

Software

The following sampling of software is appropriate for use with children in early childhood classrooms. Items in boldface are available at WIU.

Quality Computers 1-800-777-3642

ITEM	ITEM #
Bilingual Writing Center	521122 (school) 39906 (lab)
Cinderella (CD-ROM)	52214
Paper Bag Princess (CD-ROM)	52011
Sleeping Beauty (CD-ROM)	39830

Educational Resources 1-800-624-2926

ITEM	ITEM CODE
Kid Kuts	IBM
Once Upon a Time (Vol. 3)	MAC
Favorite Fairy Tales & Nursery Rhymes Big Book Maker	MAC
Lab Pack (5)	MAC
The Three Princesses Big Book Maker	MAC
Lab Pack (5)	MAC
Tall Tales & Folk Heroes Big Book Maker	MAC
Lab Pack (5)	MAC
Beauty & the Beast and The Little Mermaid	MAC
Robin Hood and Peter Pan	MAC
Monsters & Make-Believe	MAC
Transportation Transformation	APL
The Whole Neighborhood	IBM
Greatest Children's Stories Ever Told	CD-ROM/MAC
Nursery Rhymes	CD-ROM/MAC
Math for Beginners Vol. 1 (laserdisc)	CAV
Dinosaurs (laserdisc)	CLV
The National Zoo (laserdisc)	CLV
Insects (laserdisc)	CLV

William K. Bradford 1-800-421-2009

ITEM	ITEM CODE
The Princess & the Pea	PRIN
Lab Pack (10)	PRINL

Pre-Kindergarten Activities

Computer Knowledge

Introduce computer and use appropriate terminology

Computer demonstration with large screen TV.

Introduce computer vocabulary

Verbally identify parts of the computer using small groups (2-4 children)

_____ computer
_____ monitor
_____ keyboard
_____ disk
_____ disk drive
_____ printer
_____ mouse

Keyboarding Skills

Introduce keyboard vocabulary

Verbally identify keys with small groups of children or use large screen TV to learn the location of keys. (See page 7 on keyboard skills chart.)

Use laminated templates with individual keys cut out to introduce specific keys.

Place stickers on individual keys (apple, return, space bar, Esc, delete) to help in quick identification.

Use plastic keyboard floormat to learn location of keys.

Peripheral Devices Skills

Introduce vocabulary used to operate devices

Touch Window

Demonstrate touching of screen to introduce the vocabulary:

_____ touch
_____ beep

Beginning level students—use a battery operated toy or pop-up toy with a single switch to introduce cause/effect relationships.

Muppet Keyboard

Demonstrate touching of keyboard to introduce the vocabulary:

_____ stop
_____ go
_____ zap

Beginning level students—make signs with the words (stop, go, zap); use the signs in playing simple identification games.

Mouse

Demonstrate moving the mouse to move the arrow around the screen; model clicking and dragging the mouse to introduce the vocabulary:

_____ click
_____ double click
_____ arrow
_____ drag

Beginning level students—practice using any toy that uses a magnet on a wand to move the object around a board (Example: Willy Wooly magnet drawing face).

From: Springfield Public Schools. *Elementary Technology Resource Guide*, July 1993.

Pre-Kindergarten Resources

The following are lists of specific programs to use as well as a few suggestions for expanded activities with additional programs, you may want to purchase. Some are available from the software library. These titles are recommended by Kathy Lilly, Pre-K teacher at Webster Elementary, Springfield, IL.

Touch Window Programs
Creative Antics (A)
Creative Capers (A)
Wheels on the Bus I, II (A)
Touch and Match (A)
Where's Puff (A)
Let's go Shopping (A)

Additional Titles
McGee (A, M)
McGee at the Park (A, M)
McGee at the Park (A, M)
The Playroom (A, M)
Katie's Farm (A, M)
Fun on the Farm (A)
At the Zoo (A)
Millie's Math House (M)
Just Grandma and Me (CD)
KidPix (M)

MECC Programs*
First Letter Fun
Fun From A to Z

M = Macintosh
A = Apple II
CD = CD-ROM
L = Laserdisc
* = District License

Extension Activities

Software Titles	**Activities**
Wheels on the Bus I, II	Xerox the pictures used with this program. Children wear the picture as a necklace and imitate the actions while the group sings the song.
Where's Puff	Hide a stuffed cat in different parts of the room. Ask children to verbally identify "Where's Puff."
Let's go Shopping	Children can go "shopping" at the grocery store or toy store to buy their favorite items.
	Children can categorize their favorite foods and toys on the flannel board or by cutting and gluing magazine pictures.
Millie's Math House	Children make their own Mouse House using pre-cut shapes.
	Children make their own cookie jar, practicing the skills learned in the cookie factory game.
	Children make their own pair of shoes.

Kindergarten Activities

Computer Knowledge

Introduce computer	Perform a computer demonstration with a large screen T.V.
Introduce computer vocabulary	Use: • Blackline masters for classroom practice • Computer demonstration with large screen TV to name computer, disk drive monitor, printer keyboard, mouse disk, cursor

Keyboarding Skills

Introduce keyboard vocabulary	Use: • Blackline masters for classroom practice • Computer demonstration with large screen TV • Stickers on individual keys to help in quicker identification • Plastic keyboard floormat to learn location of keys

Curriculum Applications

Learn to use computer for Computer-Assisted Instruction in various academic areas	Perform a computer demonstration with large screen TV.
Introduce word processing	Use commercial software for very simple word processing such as • typing name • using inventive spelling to write journal entry or simple sentence • choosing picture for enhancement

Kindergarten Resources

The following are lists of specific programs to use. Some are available from the software library and some you may want to purchase. These titles are recommended by Jeanne Skeeters, kindergarten teacher at Hay Edwards, Springfield, IL.

MECC Software Titles*

Phonics Prime Time: Initial Consonants, Final Consonants
Picture Chompers
Counting Critters
Arithmetic Critters
Early Addition
Patterns
Mystery Objects
Woolly Bounce

Additional Resources

The Children's Writing and Publishing Center (A)
Writing Center (M)
Just Grandma and Me (CD)
Muppet Slate (A)
Big & Little (A)

M = Macintosh
A = Apple II
CD = CD-ROM
L = Laserdisc
* = District License

What To Look for in Choosing Software for Children of All Ages

The following characteristics are those that parents should look for in choosing software for their children. There are many programs available for children today, however, they are not all worth purchasing.

Software Characteristics and Program Features

1. Does the software contribute to children's comprehension of the world around them? Does it both foster and satisfy curiosity?
2. Is the program content appropriate and interesting for children?
3. Does the software require a high degree of interaction from the children, calling for thoughtful responses and providing options which require children to make choices?
4. Are clear directions for running the program provided, and does the program consistently respond as expected?
5. If the software is advertised as a program children can run for themselves, can they do this easily? If adult help is needed initially, can a child manage alone after some experience with the software?
6. Is the program designed so that it is likely to be used repeatedly, even by the same child, thus justifying the cost?

Ideas for Previewing Software

1. Read software reviews in computer magazines and make a list of programs you would like to try.
2. Ask teachers or other parents to recommend good software.
3. See if your library has a children's software collection.
4. Ask for a demonstration of children's software at your local computer store.
5. Visit a friend who has a program you want to preview and ask to try it out.
6. Write to software producers asking to borrow software for a specified trial period, agreeing in advance that no copies will be made.

Educational/Developmental Enhancement Due to Computers in the Classroom and at Home

- lends visual, motor, auditory support for unsophisticated learners
- encourages creative writing in that the writer doesn't have to concentrate on handwriting skills
- appeals to limited-English proficient and special needs children
- encourages positive learning in many curricular areas
- some programs enhance problem-solving skills with immediate feedback
- some programs encourage children to learn to cooperate, listen, and to appreciate the work of others
- is educationally motivating and exciting
- enhances fine motor skills
- promotes active learners, not passive learners
- certain programs focus on teaching basic concepts to more difficult concepts
- offers repetition, reinforcement, and further experience in tasks first introduced by the teacher
- offers sensorimotor experiences
- enhances memory, social development, creativity, spatial relation development, and overall cognitive development
- encourages self-expression
- builds computer literacy skills in children at a very young age

Integrate, Don't Isolate!—Computers in the Early Childhood Curriculum

Bernadette Caruso Davis and Daniel D. Shade
December 1994
ERIC Digest #EDO-PS-94-17

Despite the promises and predictions made by educational researchers in the early 1980s, computers have not revolutionized education overnight, and few schools have invested wholeheartedly in instructional technology. Instead, in an effort to provide computer access to all students at an affordable cost despite the low ratio of computers to students, and because some critics feel there is a lack of quality software or that technology is too complex (Maddux, 1991), schools have often put computers in a single room where children use them once a week under a specialty teacher's supervision.

Unfortunately, this practice has undermined the most valuable aspect of the computer—its ability to cut across traditional subject boundaries as a practical and useful tool. Papert (1993) compares the isolation of computers in labs to the body's immune response to a foreign intruder; by removing computers from the classroom and relegating them to an isolated lab, schools have effectively minimized the potential impact computers can have on children's learning by turning the technology into a separate, unrelated subject area called "computer literacy." In this lab approach, Papert further argues, students have access to about 1/50th of a computer in school, far from the critical level needed for this technology to have a major impact on educational practices or the learning experiences of children. The fatal flaw in taking computers out of the classroom is that any information learned about the computers today will be obsolete by tomorrow. Only when computers are integrated into the curriculum as a vital element for instruction and are applied to real problems for a real purpose, will children gain the most valuable computer skill—the ability to use computers as natural tools for learning (Shade & Watson, 1990).

Integrated Learning Systems Versus True Integration

The term "integrated learning" has gained popularity over the past half-decade, evidenced by the appearance of numerous prepackaged reading, math, and science curricula on the pages of educational software catalogs. Unfortunately, these well-marketed packets are often no more than unrelated activities clustered around a single topic and give little consideration to the development of larger concepts or goals (Routman, 1991).

These misnamed integrated learning systems view a topic, such as dinosaurs or planets or fish, as only a series of superficially related activities and isolated skills linked casually together in sequence, much as a worm appears to be no more than a chain of loosely attached segments that can be severed and still function independently. Real knowledge is much more than a group of unrelated segments; each section supports a particular function, and all are related to one another. If the severed pieces are thrown into a box (brain) and shaken up without the support of their natural connections, neither the worm nor deep understanding will grow.

True integration respects the interrelationships of the disciplines—language, mathematics, science—as natural and necessary to achieving the goal of becoming educated about a particular topic. As in the "project" approach (Katz & Chard, 1989), children exercise all the developmental or curricular domains as they complete self-initiated projects individually or in small groups. For example, if the teacher selected the topic "Fish" for integrated study, the first step in planning might be to define several central concepts about fish that are meaningful and relevant to the students' lives. Next, activities might be chosen based on the desire to further explore these concepts. The teacher would then determine the most effective medium for supporting the activities selected. Sometimes computers will be the most appropriate material for concept exploration; at other times, they will not. Computers, like any learning material, are neither panacea nor pernicious (Clements, 1987).

Examples of Computer Use in Integrated Curricula

When exploration of a concept encourages students to write letters, stories, poems, or reports, using a word processor allows children to compose, revise, add, and remove text without being distracted by the fine motor aspects and tedium of forming letters. Research demonstrates that children who write on word processors compose longer and more complex stories, are less worried about mistakes, and are more willing to revise (Clements & Nastasi, 1993; Feeley, Strickland, & Wepner, 1987).

The teacher implementing the unit on "Fish," for example, might use the KID PA program with very young children to construct a story through pictures and labels that can be narrated in the child's own voice by recording through the computer's microphone. With KID WORKS 2, students might write and draw what they have learned about fish and hear their composition read back. Slightly older students could use CD-ROM encyclopedias to gather data and STORYBOOK WEAVER to compose and illustrate original stories and reports about their topic. MY WORDS, a simple program, can be used to write letters to local experts asking for information or extending an invitation for a classroom visit. Any one of these programs provides an excellent medium for teachers to record a group report or story.

Microworlds

One of the most powerful uses teachers can make of computers is to provide students with a MICROWORLD (a microworld is software with which children play and discover concepts and cause-effect relationships included by the software developer for this purpose), a bridge between hands-on experiences and abstract learning, in which children can learn about a topic through exploration and experimentation (Papert, 1980; 1993). An example is EZ LOGO, which is often used to introduce young children to geometric concepts in a playful way that is intuitive to them, just as one might use blocks to teach size and shape relations. Microworlds are developmentally appropriate software programs that are harder to find than are drill-and-practice programs, but that are much more valuable.

For example, ODELL DOWN UNDER allows children to explore the ocean's ecological interactions by becoming a fish, with all the abilities and vulnerabilities of the particular species selected. ZOOKEEPER and SAN DIEGO ZOO PRESENTS THE ANIMALS! give students the chance to examine the habitats of several aquatic creatures. Graphics programs such as COLORFORMS FUN SET provide students with the tools and props to construct their own underwater environment.

Teacher Roles in Computer-Enriched Classrooms

1. *Instructor*

   When the computer is introduced into the classroom, an initial learning period occurs during which the children need time to become familiar and comfortable with the technology. It is during this period that the teacher needs to assume the most active role in instructing children, guiding them through new software and encouraging their exploration of the material.

2. *Coach*

   As students gain experience with computers, the focal role held by the teacher gradually diminishes; children are able to perform tasks independently, and peers begin to take over the role of instructor. The teacher then moves into the role of facilitator, providing guidance and support when needed and ensuring appropriate behaviors, while control of the situation remains in the hands of the child.

3. *Model*

   Children will be much more likely to use the computer as a practical, integrated tool for learning if they see the teacher doing the same. Using the computer during whole and small group instruction and for recording stories and producing classroom signs and charts are ways in which the teacher can be a highly visible user of technology.

4. *Critic*

   Responsibilities of the teacher in the computer-enriched classroom begin before the computer is introduced to the students. In providing a rich, challenging, and appropriate learning environment, teachers must take an active role in selecting the software that will truly enhance children's learning and development.

Conclusion

Despite revolutionary advances in the field of educational computing, technology remains simply a tool. Potentially powerful and stimulating, the computer is only an inert object that can never be a substitute for the personal touch of the classroom teacher. How teachers implement computer use in their schools is critical. Without proper integration of computers into the curriculum, the benefits of technology to foster children's learning cannot be fully achieved, regardless of the creative potential of any software used.

For More Information

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Integrated Learning and Thematic Unit Planning

Integrated Learning

by Kathy Barclay and Cecelia Benelli
Western Illinois University

Step One: Identification of a Theme

1. Is this a theme/topic that children are naturally curious about?
2. Do children already have some understanding of and experience with this theme/topic?
3. Will the children gain new knowledge and understanding about their world and its people as they participate in this unit?
4. Does the theme lend itself to the incorporation of learning experiences from most, if not all, curricula areas?
5. Does the theme lend itself to the exploration of a variety of related subtopics?
6. Will there be ample resources available for this theme? (related books of various genres, manipulatives, props, art/cooking/science supplies, and so on)

Step Two: Themestorming

1. Are most, if not all, curricular areas represented?
2. Is there a balance of experiences: inquiry activities, shared reading and writing, independent reading and writing, oral sharing, and reading aloud?
3. Is there a balance of small group, large group, and independent learning experiences?
4. Are there both indoor and outdoor experiences?
5. What additions can be made to the present learning centers in order to enhance the unit?
6. What new centers or learning stations need to be created?
7. What long-range projects might the students pursue?
8. Are there guest speakers, field trips, and so on that might enhance this unit?
9. How can the children's families be involved during this unit?

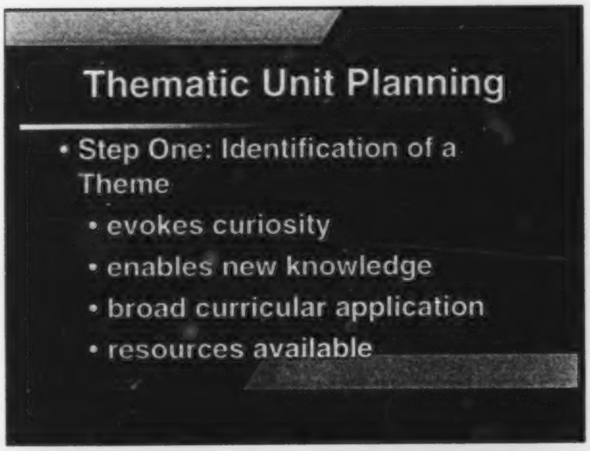
Step Three: Identify Unit Objectives

1. What content knowledge might the students pursue during this unit?
2. What process knowledge/skills might the students gain through their participation in this unit?
3. What habits and attitudes might the students develop as a result of their participation in this unit?

Step Four: Preparation for Teaching

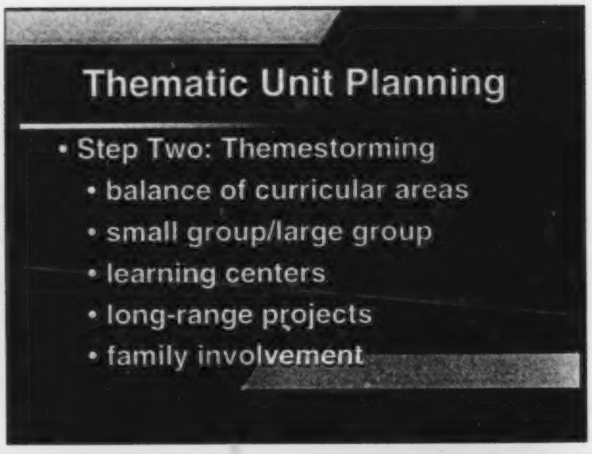
1. What starter and closure activities might be used?
2. How might the classroom be arranged/rearranged to facilitate student interaction during this particular unit?
3. Have I collected the necessary books, poems, manipulatives, and other sources?
4. How will I assess student learning throughout the unit?
5. How will ! evaluate the effectiveness of the learning experiences within the unit?
6. What collaborative learning and/or other grouping arrangements need to occur? What can I do to facilitate this?

Sample Lecture Notes/Computer Slides



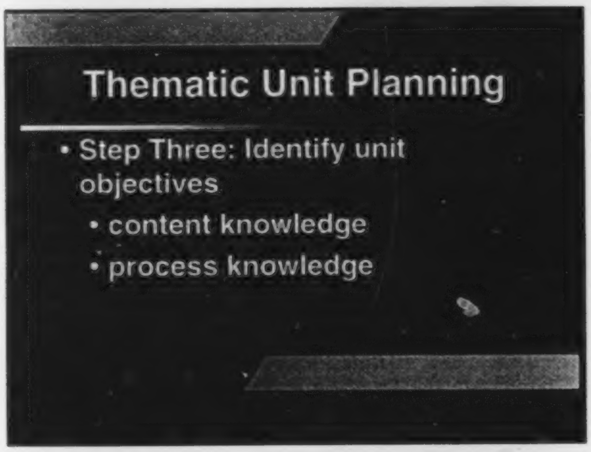
Thematic Unit Planning

- Step One: Identification of a Theme
  - evokes curiosity
  - enables new knowledge
  - broad curricular application
  - resources available



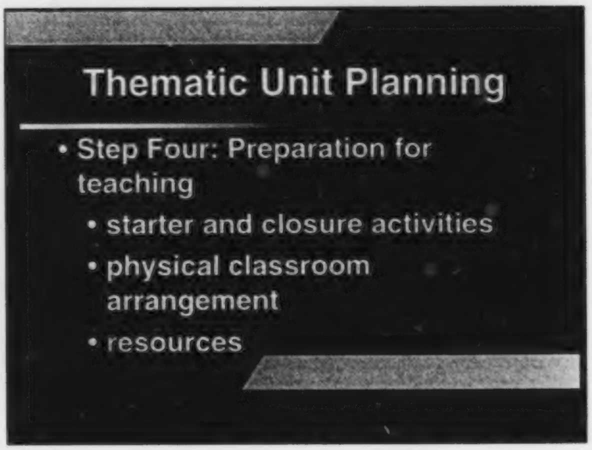
Thematic Unit Planning

- Step Two: Themestorming
  - balance of curricular areas
  - small group/large group
  - learning centers
  - long-range projects
  - family involvement



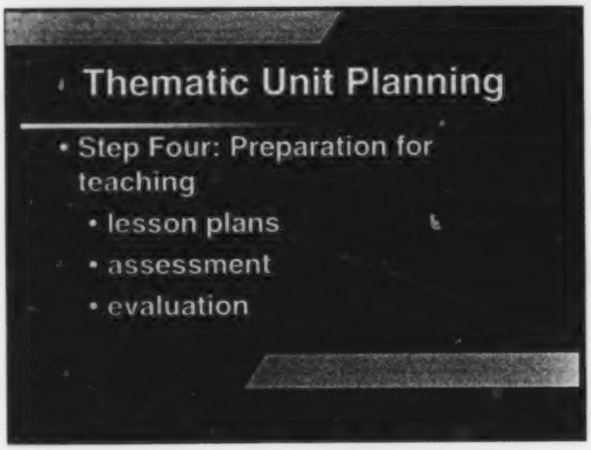
Thematic Unit Planning

- Step Three: Identify unit objectives
  - content knowledge
  - process knowledge



Thematic Unit Planning

- Step Four: Preparation for teaching
  - starter and closure activities
  - physical classroom arrangement
  - resources



Thematic Unit Planning

- Step Four: Preparation for teaching
  - lesson plans
  - assessment
  - evaluation

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Related Books, Poems, Stories, Songs
(*Indicates those to be read aloud by the teachers)
- Warm-ups
- Old Favorites
- New Favorites

Reading/Writing Experiences
Shared Reading/Writing
Independent Reading/Writing

Inquiry Activities
(Includes first-hand experiences, problem-solving, & discussion)

Sharing Experiences

Theme:

Long-Range Projects
(I = Independent)
(P = Partner)
(C = Collaborative)

Science Experiences

Music/Movement Experiences

Math Experiences

Field Trips/Guest Speakers

Home-School Connection

Art/Social Studies/Music

Snacks/Cooking Activities

Theme-Related Learning Centers/Stations

Other Resources

Becker, J., Reid, K., Steinhaus, P., & Wieck, P. (1994). *Themestorming: How to build your own theme-based curriculum the easy way.* Beltsville, MD: Gryphon House.

Dodge, D. T., Jablon, J. R., & Bickart, T. S. (1994). *Constructing curriculum for the primary grades.* Washington, DC: Teaching Strategies, Inc.

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Using Technology To Enhance Parent/Community Involvement

Dr. Kathy Barclay

Ameritech

WIU Western Illinois University

Tools for Teaching with Technology

The WIU Approach
to Integrating Technology
into Teacher Education

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Using Technology To Enhance Parent/Community Involvement

Dr. Kathy Barclay, Department of Elementary Education and Reading

Module Context

Course Description

ELED 476G - Parent Involvement. Techniques are discussed for working with and involving families and communities in their children's education. An investigation of community resources and services for children and family is made.

Course Prerequisites

Acceptance into elementary education program

Recommended Core Modules To Complete Prior to This One

Using the Computer To Enhance Teacher Productivity; Instructional Video Production for the K-12 Classroom also helpful

Additional Courses Where Module Could Potentially Fit

Possibly Educational Administration and/or Special Education courses that include parent/community relations as a course component

Other Relevant Student Characteristics

Preservice and inservice teachers, elementary school supervisors, and administrators

Module Focus

Title of the Module

Using Technology To Enhance Parent/Community Involvement

Content Area of the Module

Strategies for enhancing family and community involvement for elementary school educators

Description of the Module

This module includes key characteristics of home-school communication and community involvement with emphasis on the role of the teacher in establishing frequent, clear, and two-way communications between school and home. Home-school communication and community involvement strategies include development of newsletters and other forms of parent letters, use of videotapes, and the creation of computerized databases for volunteers and community resources.

Ameritech Student Outcome(s) Supported

- To use communications and technologies to enhance parental involvement and administrative effectiveness within the elementary schools.

- To use communications technologies to enhance personal and professional productivity.

Specific Module Objectives

- To analyze strengths and weaknesses of various modes of communication.

- To create a well-written, attractive, and informative newsletter.

- To determine family/community resources to be used in the classroom and school.

- To become aware of alternative forms of communicating with parents and members of the community.

Technology Competencies Developed Through the Module

Awareness

Students will become aware of how to create a computerized database for collecting, storing, and retrieving information related to the use of parent/community resources. They will also learn the procedures involved in selecting, using, and producing videotapes for public relations and parent education purposes.

Hands-On Experience

Students have the option of creating a database for storing information related to family/community involvement; utilizing videotapes in a parent education workshop; and/or scripting, filming, and editing a videotape to be used for public relations or parent education purposes.

Skills Development

All students will be required to use a computer software program to create a classroom or school newsletter for dissemination to families.

Module Contents

Teaching Strategies

The instructor will lead discussions pertaining to the need for communication among schools, homes, and communities. Visuals to accompany these discussions will be created with Persuasion, an electronic presentation software. Students will work collaboratively to develop criteria for creating classroom/school newsletters after evaluating a number of newsletters created through various means, including a variety of computer software programs. Students will construct their own newsletter using a computer software program, following the criteria developed in class.

The instructor will share a number of databases created for storing and maintaining information about family/community involvement. Specific databases will include a database for school/classroom volunteers, and a database of community resources. Students will select course projects from among a list of options. Creating a database is one option from which students may choose.

The instructor will show several videos that are available commercially in the area of parent education, and will lead the students in devising a list of criteria for selecting and using commercial videos. The instructor will also share videos produced for public relations purposes, and lead a discussion of the criteria for effective creation of these types of videos.

Students will select course projects from among a list of options. Creating a videotape to be used for parent education or public relations is one option students may choose. Students selecting this option may receive technical assistance from the Satellite Education Network office at WIU.

Learning Strategies

Students will work in collaborative groups to analyze sample newsletters and develop criteria for creating school/classroom newsletters. Students electing to create a videotape for one of their projects will work cooperatively in script-writing, filming, and editing.

Ways Students Will Demonstrate Competency/Assessment

All of the students in ELED 476G are required to create an effective parent newsletter. These newsletters will be evaluated in order to ascertain competency in using a software program for creating newsletters. (See the newsletter evaluation form in the Supplementary Materials.)

Effectiveness of cooperative grouping assignments will be based on observations made by the instructor as students work in groups, and as they present their "product(s)" to fellow class members. (See Supplementary Materials for project evaluation forms.)

Ways Students Will Learn How To Use Technology in Their Classrooms

The preservice teachers will be able to use technology to enhance communications with parents and members of the community. Additionally, once prospective teachers can develop a newsletter, they can begin to show children—even in the primary grades—how to create their own newsletters.

Preservice teachers will be aware of the effective use of time-savers such as databases for storing and retrieving information.

Preservice teachers will be able to evaluate, select, and use appropriate videotapes for parent education purposes. These skills should transfer to use of video with children in the classroom. Additionally, preservice teachers will be acquainted with the creation of videotapes—knowledge which should transfer to video production with elementary students.

Module Implementation

Equipment/Technology Needed

Students need to have access to computers, printers, and video monitors. If they choose one of the video options, they will also need a camcorder and VCR.

Software or Other Electronic Media Needed

Students need to have access to software programs for creating newsletters and databases.

Other Resources Needed

For further information on parent/community involvement, see the following publication:

Barclay, Kathy H., & Boone, Elizabeth. (1995). *Building a three-way partnership: Linking schools, families, and communities.* New York: Scholastic.

Implementation Recommendations

This module has been flexibly designed so as to provide a variety of choices with respect to student projects which utilize technology. For example, students may choose to create a computerized database for storing information related to a school or district volunteer program, or to create a database of community resources. They might also choose to develop a videotape for use in public relations or parent education. All students in the Parent Involvement course were expected to use a computer software program for creating a classroom or school newsletter.

Although several software programs are demonstrated in the class, students are free to utilize any hardware and software available to them through WIU, their local school system, or their home. By allowing students this flexibility, all students in this course were able to complete at least one project requiring the use of technology in parent communication.

With respect to the development of a videotape, students have the option of receiving assistance outside of class in the use of the camera and editing equipment. As with the computer assignments, students are allowed to use their own equipment. Editing of the videotape is recommended, but not required.

Supplementary Materials

Course Syllabi

ELED 476G: Parent Involvement
Dr. Kathy Barclay
Department of Elementary Education and Reading, WIU

Course Description

Techniques are discussed for working with and involving families and communities in their children's education. An investigation of community resources and services for children and family is made.

Purpose

Lasting school improvement will prevail only if we, as educators, pursue and encourage the active involvement of families and community members. In this course, we will emphasize four areas of parent and community involvement: (1) home-school communication, (2) parent education, (3) volunteerism, and (4) public/community relations.

Required Texts

Henderson, Anne T., Marburger, Carl L., & Ooms, Theodora. (1989). *Beyond the Bake Sale: An Educator's Guide To Working with Parents.* Columbia, MD: National Committee for Citizens in Education.

A handout packet (selected journal articles, handouts, and course study/application guides) stored in a three-ring binder and brought to each class session takes the place of a traditional course textbook.

Objectives

Upon successful completion of the course requirements, students should be able to

1. help build trust and confidence between parents and educators.
2. provide fellow teachers and principals with some compelling reasons for involving parents and community members in our schools.
3. suggest many specific ways parents can be constructively involved in the school, and in their child's learning.
4. assess their school's current strengths and liabilities in the area of parent-community involvement.
5. suggest changes in school/district policies that will facilitate stronger home-school collaboration.
6. develop parent education materials for use in demonstrating how parents can support and strengthen their child's learning.
7. utilize various techniques, including technology, to communicate effectively with parents.

Course Examinations/Assignments/Evaluation

1. *Study Guides.* You will complete ten study guides worth 5 points each for a total of 50 points toward your final course grade. Content of the study guides will be directed toward required readings and upcoming course topics.
2. *Final Exam.* There will be one comprehensive, objective, computer-scored exam administered during the last night of class. 100 points

3. *Newsletter*. (Complete one of the following options.)

OPTION ONE: (For teachers not presently preparing and disseminating newsletters.)

Using a computer software program for designing newsletters, design one parent newsletter that you could send home. Your newsletter is to be printed single-spaced, on both sides of the paper (no blank sides), and should not exceed two pages front and back. You should have a heading, and follow the criteria discussed in class for designing a neat, attractive, "reader-friendly," informative newsletter. Somewhere in your newsletter you are to include the following:

- a recipe for one nutritional snack, or directions for a home-learning activity parents can make/do with their children
- titles of several suggested children's books and where they can be obtained
- at least one book for parents to read for information and ideas related to parenting, education, and/or child development, and where the book(s) can be obtained
- a brief informative article for *parent education* (i.e., "How To Raise An Eager Reader")
- classroom news
- one additional section of your choice such as "want ads," or "ask your child about . . ." sections

You are to hand in two copies. One copy will be evaluated and returned; the second copy will remain in the instructor's files. Please save a copy for your own files.

Evaluation: This project will be evaluated for form, as well as for content. It should be well-written and convey a *positive* self-image of your classroom/school/center. The content should reflect an understanding of course content regarding home-school communication. Be sure to follow the criteria discussed in class for a well-written, well-prepared newsletter. 25 points

OPTION TWO: (For teachers who routinely send parent newsletters.)

Using the criteria discussed in class for designing neat, attractive, "reader-friendly," informative newsletters, critique a minimum of three of the newsletters you have sent home within the past four months. Attach a (typed) list of strengths and recommendations for improvement (if applicable) to each newsletter. Finally, create a new newsletter reflecting the characteristics discussed in class and incorporating your own recommendations for improvement.

You are to hand in two copies of your newly created newsletter. One will be evaluated and returned to you along with your critiques/previously-prepared newsletters, and the second will be retained in the professor's files.

Evaluation: This project will be evaluated on thoroughness of critiques and quality of your newly created newsletter. The content should reflect an understanding of course content regarding effective home-school communication, and should be free from typographical, spelling, and/or grammatical errors. 25 points

4. *Parent Workshop*. With a group of up to four classmates, plan a guide for a parent workshop. Your guide should contain:

- an annotated agenda for a one-hour workshop

- objectives
- a *detailed script* which includes the following:
    (1) opening/welcome and icebreaker;
    (2) statement of rationale or theory (in easy-to-understand language), designed to help parents understand WHY they need to apply the information/skills emphasized in this workshop;
    (3) drawings of any visuals/overhead transparencies and so on to be used;
    (4) explanations for at least two to four "hands-on activities" in which parents will participate;
    (5) handouts to be given to parents; and
    (6) brief closing remarks.

You are to hand in two copies. One copy will be evaluated and returned; the second copy will remain in the instructor's files. Please save a copy for your own files.

Evaluation: This workshop guide will be evaluated for its completeness, organization, and usefulness to you and your peers as teachers/presenters. It should reflect an understanding of major course concepts and developmentally appropriate practice. 75 points (One score is earned by all group members.)

5. *Presentation of Parent Workshop.* You will be presenting your workshop to a group of classmates/parents during class time.

   Evaluation: Attendees will be evaluating your presentation based on the following criteria: (1) presenters are enthusiastic and well-prepared; (2) presenters are aware of the needs of the audience and seek to make them feel comfortable and at-ease; (3) the visuals are large enough to be seen by all; (4) the hands-on activities are conducted in a timely and efficient manner, with all materials available in order to assure maximum participation from the audience; and (5) the handouts provide important and helpful information.

   In addition, you will complete a self-evaluation based on the above criteria, and including "workshop 'flowed well' from beginning to end, with time for closing remarks."

6. *Parent-Child Interaction Mini-Session.* Our class will conduct a parent-child interaction workshop for parents of preschool and kindergarten children. You will work with a group of up to four classmates to develop a 15-minute session which will be repeated four to six times during the evening. You will turn in a written plan for your session which includes objective(s), activity description, and explanation (in language appropriate for family members) of how the activity benefits young children. A handout with this information should be prepared for distribution to parents. The handout should also include ideas for extending and expanding the activity at home.

   Evaluation: This project is worth up to 50 points toward your final grade. Thirty points will be awarded for the plan which will be evaluated on completeness, creativity, and quality. Emphasis will be on assessing the creation of a thoughtful mini-session from which family members could gain important information related to helping their child develop. (The handout should be attached to the plan you turn in.) The presentation will be worth up to 20 points and will be evaluated for your ability to interact comfortably with parents and children, and your ability to informally share and point out important information to parents during the mini-session.

7. *Choice Projects.* From among the following options, you are to select projects that total a possible point-value of 50 points. **Please Note:** Due dates for projects vary. No projects may be repeated, nor can completion of extra projects be awarded points toward course grade. All projects must be typed.

- **Assessment of Current Parent-Community Involvement Effort** (Graduate students only)

  Using the four checklists on pages 79-93 of the *Beyond the Bake Sale* text, you are to assess the strengths and liabilities of a school's current parent-community involvement effort. You should make six copies of the checklists and then have four other people, in addition to yourself, fill out the checklists. Use the sixth copy to tally all responses. In a mini-paper of approximately five to six typed pages, summarize your findings for each area included in the text, noting both strengths and areas of need. Include a final section for "recommendations for improvements." **You are to turn in TWO copies of your paper, in addition to the completed checklists (these will be returned to you). One copy of your paper will be evaluated and returned to you; the second copy will remain in the instructor's files.**

  Evaluation: This paper will be evaluated for its completeness, organization, and usefulness to you as a member of your school's teaching/administrative staff. Your paper will be evaluated for form, as well as for content, and should reflect an understanding of major course concepts. 50 points

- **Resource Notebook for Parents**

  For this assignment, you are to locate, from professional journals or from journals in the area of parent education, a minimum of twenty articles that would be appropriate for parents to read to broaden their knowledge base of ideas concerning how to help their children develop—physically, emotionally, academically, socially, or psychologically. At least ten articles should be appropriate for helping parents understand current instructional practices such as the use of inventive spelling, developmentally appropriate practice, and so on. (If desired, you may substitute pamphlets and/or brochures from professional organizations for articles.) You are to organize the articles into appropriate categories and include a Table of Contents for each section of the guide, as well as a cover letter explaining to families the purpose of the notebook and how it can be used/obtained.

  Please Note: Articles included in your packet for this course may not be included in this notebook.

  For each article/pamphlet/brochure include a one-half to one page typed explanation of why you selected this article, and how it could be used with parents. The articles with explanations should be housed in a three-clasp folder or small three-ring binder with dividers labeled for each section or broad topic (e.g., "health & nutrition," "literacy development, " "social and emotional development").

  Evaluation: The quality of articles selected for inclusion will, in large part, determine points awarded. The notebook will also be evaluated for organization, professional and "reader-friendly" appearance, and for the cover letter telling parents about the availability of the notebook. 50 points (40 points for articles, 5 points for organization, and 5 points for letter)

- **Parent Education Videotape**

  Develop an eight- to ten-minute videotape with accompanying script and guide for its use. The purpose of the video will be to educate parents about some aspect of child development—physical, emotional, social, cognitive, and so on—and to give them specific ideas for how they can help their child(ren). You are encouraged to work in a group of up to six classmates for this project. The Satellite Education Network staff may provide some technical assistance to you insofar as filming and editing your tape. You will need to have your title, outline, and script approved prior to filming.

Evaluation: This project will be evaluated according to the criteria for effective video tapes discussed in class. Selecting and conveying appropriate, high-interest information in a manner appropriate for parents, will be of utmost importance. 50 points (All group members will receive the same score.)

- **Public Relations Videotape**

  Develop a six to eight minute videotape with accompanying script and guide for its use. The purpose of the video will be to inform community members and parents about some aspect of your school or district. You are encouraged to work in a group of up to six classmates for this project. The Satellite Education Network staff may provide some technical assistance to you insofar as filming and editing your tape. You will need to have your title, outline, and script approved prior to filming.

  Evaluation: This project will be evaluated according to the criteria for effective videotapes discussed in class. Selecting and conveying appropriate, high-interest information in a manner appropriate for parents and members of the community will be of utmost importance. 50 points (All group members will receive the same score.)

- **Parent Education Bulletin Board**

  Individually, or with a partner, create a bulletin board display for parent education. Off-campus students may document the display through photographs/slides and a one-page explanation of your topic/purpose/bulletin board description. On-campus students may ask the instructor to locate a bulletin board space in Horrabin Hall. Your board should be displayed for at least one week.

  Evaluation: This project will be evaluated for its ability to convey an attractive, important message to parents. Language appropriate for the intended audience should be used. In most cases, a pocket for an accompanying handout should be attached to or near the bulletin board. 25 points (Partners will receive the same score.)

- **Computerized Database for Volunteers**

  Using a software program, create a computerized database of names, addresses, telephone numbers, special skills, and interests of potential volunteers for your school or classroom. You will first need to conduct a survey to determine families' interests and availability in serving as a school, classroom, or center volunteer. (See packet for sample surveys.) You are to turn in all survey responses, a tally of the surveys, and two copies of the printout of the database, as well as a copy of the file on disk. You will receive the disk back. Be sure to keep a copy for your files and please note the software program used.

  Evaluation: Your project will be evaluated on quality of survey instrument used, as well as attempts made to enlist the support of as many volunteers as possible. In order to obtain sufficient benefit from this project, you will need a *minimum of twenty entries*. Course content related to volunteerism should be used in recruitment of volunteers. 50 points

- **Computerized Database of Community Resources**

  Develop a computerized database of information related to the community services and agencies in your community. Also, include possible guest speakers and individuals to contact about field trips. You may use any means desired to obtain the necessary information for your database. You are to turn in two copies of the printout of the database, as well as a copy of the file on disk. You will receive the disk back. Be sure to keep a copy for your files and please note the software program used.

  Evaluation: This project will be evaluated for both quantity and quality of entries, as well as organizational format. *A minimum of twenty entries is required*. 50 points

- **Parent Involvement Internship**

  Volunteer a minimum of six hours of time to an organized parent program. To document your time, you are to secure a letter from the program director stating dates and times worked. In addition, you are to write a mini-paper (2-3 pages) telling what you did and what you learned from this experience.

  Evaluation: Your project will be evaluated for completeness, content, and form. Your internship should foster a deeper understanding and application of course content, and this should be reflected in your mini-paper. 25 points

Course Evaluation/Grading Scale

In addition to the evaluation information included with each project description, assignments are evaluated for (1) clarity of expression; (2) importance, relevance, and accuracy of content; (3) relationship to course objectives; (4) creativity; and (5) quality of format.

For individual/group assignments, a percentage is calculated based on the 90%, 80%, 70%, 60% scale, where

A = Excellent paper/project. Clearly meets and *exceeds* the minimum expectations for the assignment.

B = Very good paper/project. Clearly meets the expectations for the assignment.

C = While the paper/project does meet the minimum expectations for the assignment, it is only of average quality in terms of the evaluation criteria stated above.

D or F = Fails to meet the minimum expectations.

Grading Scale

Your final course grade will be based on the number of points you have earned on the course assignments discussed above. Final grades will be assigned as follows:

50 points:	Study Guides
25 points:	Newsletter
100 points:	Exam
50 points:	Projects
100 points:	Parent Workshop Guide/Presentation
50 points:	Parent/Child Interaction Plan/Presentation
375 total points	

Grading Scale
337-375 = A (90%)
300-336 = B (80%)
262-299 = C (70%)
225-261 = D (60%)
below 225 = F

Forms of Home-School Communication

Class Exercise

	Purposes	Advantages	Disadvantages	To Be Considered
Informal Notes				
Newsletters				
Take-Home Folders				
Scrapbooks				
Telephone				
Videos				

Volunteerism Class Exercise

Benefits of a Strong Volunteer Program:

Reasons Why Parents Should Volunteer:

All Parents Should Be Involved in . . .

Volunteers Can Assist the Schools By . . .

Teaching Tasks:

Non-Teaching Tasks:

Contributions from Home:

Who Can Be a Volunteer?

Guidelines for Establishing a Strong Volunteer Program:

Ways To Recruit Volunteers:

Teacher's Responsibilities:

Volunteer's Responsibilities:

Reasons Why Community Members Should Volunteer Their Services to the Schools:

What Can Community Members Do To Help the Schools?

How Can Schools Recruit the Services of Community Members?

ELED 476G: Evaluation Form
Computerized Database for Volunteers

Quality of Survey Instrument	______/30
Survey Responses and Tally	______/10
Printout of, and disk containing, database organized in a manner that will allow for easy retrieval of information	______/25
Attempt to Enlist Volunteers (minimum of 10)	______/10
Total	______/75

Comments:

Computerized Database of Community Resources

Quantity of entries (minimum of 20)	______/20
Quality of entries (worthwhile information for parent involvement)	______/40
Quality printout of, and disk containing, database organized in a manner that will allow for easy retrieval of information	______/15
Total	______/75

Comments:

Parent Education Video

Video contains important message for parents	______/20
Video conveys intended message	______/25
Video is good-quality videotaping for an amateur production	______/15
Script is interesting, well-written, and free of grammatical/typographical errors and educational jargon	______/15
Total	______/75

Comments:

ELED 476G: Evaluation Form
Newsletter Assignment: Option One

Form	
Well-written, free of grammatical/typographical errors	______/10
Good quality xeroxing, front and back (no fluorescent paper)	______/4
Appealing heading with name of school/classroom and date	______/2
Neat, attractive, easy-to-read, free of educational jargon	______/10
Content	
Recipe for a nutritional snack or directions for a home learning activity	______/4
Titles of at least three children's books and where they can be obtained	______/2
Title of at least one book for parents to read for information and ideas related to parenting, education, and/or child development, and where the book can be obtained	______/4
Brief informative article (or excerpt) for parent education	______/6
Classroom news	______/4
Your choice: "Want ads," "ask your child about," students' contributions, and so on	______/4
Total	______/50

Comments:

Developing a Parent Workshop Guide

Suggestions for Getting Your Group Started

1. With your group, brainstorm topics that will be of interest to parents. Select your topic and clear it with the instructor.

2. With your group, brainstorm presentation/center ideas for your session.

3. Select specific ideas and prepare a tentative schedule/plan for your workshop. Include any ideas concerning special room arrangements.

4. Designate persons to obtain materials and prepare and present each portion of the workshop. Be sure that everyone has an active role in both the development of the workshop guide and in the presentation itself.

5. Prepare workshop guide as directed. Include all required components. Use detailed language that clearly conveys exactly what you plan to do/say throughout the workshop.

   Note: The workshop guide should represent a coherent, sequential plan for the workshop; however, different typewriters, printers may be used for different sections of the guide.

   PLEASE DO NOT USE DOT MATRIX.

6. Prepare visuals, other materials, and activities as appropriate.

Producing and Integrating Instructional Video

Dr. Mary Jensen

Ameritech

Western Illinois University

Tools for Teaching with Technology

The WIU Approach
to Integrating Technology
into Teacher Education

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Producing and Integrating Instructional Video

Dr. Mary Jensen, Department of Special Education

Module Context

Course Description

Instructional video can be used to supplement the content of any college course. This instructional video module will provide teaching and learning activities that develop awareness of, experience in, and hands-on skills using current video technology. The primary purpose of using video technology is to enhance existing curriculum. A secondary purpose is to make course assignments more creative and motivating for the students.

Course Prerequisites

Due to the fact that instructional video can be used in virtually any course, the basic prerequisite is that the students be familiar with the video cameras to be used. Learning how to use the cameras is accomplished through demonstration and practice. This process can be completed as a component of the coursework prior to the video assignment.

Recommended Core Modules To Complete Prior to This One

Prior to using video technology on course assignments, it would be beneficial for students to have demonstrated competency in the core module, *Instructional Video Production for the K-12 Classroom*. This core module includes identification of how video can be integrated into teaching, preproduction activities, the actual shooting of a video, its editing, and the presentation. Once this core module has been completed, all of these skills can then be applied to course content in any subject area.

Additional Courses Where Module Could Potentially Fit

Instructional video can be adapted to use in any course. The instructor would simply need to construct modified assignments based on those already used in the course.

Other Relevant Student Characteristics

Instructional video can be used with students of any age. This module has been field tested with students from elementary grades through college. It has been an effective teaching technique and has motivated learning with students of all ages.

Module Focus

Title of the Module

Producing and Integrating Instructional Video

Content Area of the Module

Instructional video can be applied in any content area. The module was field tested in teacher education courses in the areas of language arts, behavior management, and social skills.

Description of the Module

The goal of the instructional video module is to introduce students to the use of video in the classroom. This will be accomplished as the teachers use video as a teaching technique during class lessons. Following demonstration of video technology, students will be required to use video formats to enhance course assignments.

Ameritech Student Outcome(s) Supported

- To identify resources for a wide array of academic subjects for elementary and secondary grade levels.
- To design and develop learning activities that integrate computing and communications technologies for students at different achievement levels, including gifted and those with disabilities, and for diverse cultural student populations.
- To design and develop activities that can be used in the classroom to integrate video technology for students at various achievement levels and for diverse cultural populations.
- To identify or design creative uses of telecommunications which develop student skills in problem solving, decision making, data collection, self-paced instruction, research and communications.

Specific Module Objectives

- To motivate students to achieve their highest potential in school while enhancing personal and social productivity.

- To observe the instructor using video technology in conjunction with classroom instruction.
- To be able to point to or name each of the operational features of the video camera.
- To be able to correctly use the video camera and the pertinent features.
- To practice using the video camera in a guided practice situation.
- With guidance from the instructor, to choose a topic relevant to the course content on which to produce a video.
- To write scripts for the videos using a storyboard format, including speech of the actors, behavior of the actors, shot angles (e.g., wide, close-up, telephoto), and time in minutes and seconds for all of the shots.
- To preplan, problem-solve, and practice their parts for the video production, including arranging for taping, memorizing speaking parts, and planning special effects and sound effects.
- To videotape the script.
- To edit the videotape using available editing equipment.
- To view the finished video production.
- To critique the video production and brainstorm ideas for improvement for the next production.

Technology Competencies Developed Through the Module

Awareness

Students will become aware of video technology through demonstration by the instructor and practice with the video cameras.

Hands-On Experience

Students will gain hands-on experience in two different components. First, students will become familiar with the video camera's options and capabilities through guided practice with the instructor. Second, students will be required to independently use video technology in course assignments.

Skills Development

Students will improve skills in using video technology through course assignments. The instructor will encourage students to be creative in using video technology in their assignments. The ultimate goal is for future teachers to learn about and become comfortable in using video technology in the classroom. After they become skilled in the use of video technology, it is more likely that they will then go on to use instructional video as a tool with students in their own classrooms.

Module Contents

Teaching Strategies

The instructor has three major responsibilities to competently implement instructional video in the classroom. The first is to introduce the students to the use of video technology in the classroom through demonstration when teaching course objectives. In order to acquaint the students with the benefits and various uses of video technology, the instructor must demonstrate methods of using video in course lessons. The second responsibility is to provide practice opportunities for the students to become familiar with and comfortable using the cameras. Finally, the instructor must follow-up with requirements to use video technology in course assignments. Assignments should be highly structured at first to provide specific guidelines to the students as to how to incorporate video into assignments with parameters such as topic area, length, types of shots required, special effects required, and the specific editing procedures. After students demonstrate competency with guided assignments, the instructor should encourage the students to be more independent and creative in designing video productions that will enhance their assignments.

Instructional strategies to be used include modeling and demonstration, guided practice, and independent practice on specific assignments. As a follow-up, the instructor may require the students to use their own creativity to incorporate video technology into assignments.

The utilization of cooperative learning groups would be an excellent teaching strategy to use with the production of an instructional video. The groups can be utilized during the guided practice as well as during the independent practice components of the module.

Resource people who can be involved in the instructional process may include professionals in the field of video technology. They would be able to provide assistance in teaching students how to use the video cameras, provide direction in the process of creating story boards (scripts), provide helpful hints on shooting the videotape, and provide their expertise and instruction on methods of editing the videotape.

Learning Strategies

During the module, students will be actively involved in all phases of the learning process concerning instructional video. At the first stage, students will develop awareness of instructional video as a teaching technique as the instructor demonstrates the integration of video technology while teaching lessons. At the second stage, possibly in cooperative learning groups, students will be provided with hands-on practice sessions where they will become comfortable with the basic operation of the video cameras. At the third stage, during independent practice, students will utilize video technology on assignments as specified by the instructor. Finally, students will be encouraged to employ their own creativity and ideas to incorporate video technology into a course assignment.

The difference between the third and the fourth stage is in the amount of direction provided by the instructor. During the third stage, the video component of the assignment would be structured by the instructor. In comparison, during the fourth stage, students would be required to use their own imagination and creativity to create the parameters of the video component of the assignment.

Ways Students Will Demonstrate Competency

Competency for the instructional video module may be assessed in two ways. First, the instructor may look at the degree to which the objectives were mastered. This format would be more objective. The instructor could develop a checklist of skill objectives which would include the following:

- Watches teacher demonstration of video.
- Names the operational features of the video camera.
- Demonstrates competent use of the video camera.
- Uses the video camera correctly during guided practice.
- Chooses a relevant topic on which to create a video production.
- Writes a script in story board format for the video production.
- Takes part in practice situations to prepare for the videotaping.
- Videotapes the script.
- Assists with editing the video production.
- Views the completed video production.
- Participates in critiquing the video production and brainstorms ideas for future productions.

These skills may be most optimally taught and evaluated using the cooperative learning group format as an instructional technique.

A second method that could be used to assess student competency with instructional video is more subjective in nature. This procedure would involve having a panel of experts judge and score the relative merit of each production. This is a common procedure in artistic fields. The instructor may decide which form of competency assessment would be most beneficial for each group of students.

Ways Students Will Learn How To Use Technology in Their Classrooms

Extensive discussion during class addresses how the students can transfer both the video production and collaborative learning process to their K-12 classroom.

Module Implementation

Print Materials Needed

- Operational directions for the video cameras (not included here)
- Exercises for guided practice
- Exercises for independent practice
- Example of storyboard script
- Blank storyboards for writing scripts
- Assignment sheet for video production (specific requirements for content and length)
- Assignment sheet for fourth-stage video production (encourages independence and creativity with more open requirements for content and length)

Equipment/Technology Needed

- Video cameras
- Microphones
- Blank videotapes
- Editing equipment (optional)
- Special lighting (optional)
- Sound effects generator (optional)

Implementation Recommendations

- To begin with, set aside more time than you think you will need.

- Require students to hand in a first draft of the storyboard script. Require them to make needed changes. Then, require another draft before videotaping.

- Make sure there are plenty of video cameras to go around. Videotaping takes much longer than most of the cooperative learning groups originally think it will.

- Caution students to leave about 15-20 seconds of air time at the beginning and ending of each videotape sequence. If you are lucky enough to have editing equipment, this "dead air" time is necessary for editing, adding transitions, and incorporating other special effects.

- Students are usually very eager to begin taping. Make sure they have more than adequate practice before the actual taping.

- When the final productions are viewed, have a big premiere with invited guests such as other school staff, students, and parents. Serve refreshments. This has been done with all of the field testing of this module and was really fun for all involved. Good luck!

Supplementary Materials

Lights . . . Camera . . . Action!
Instructional Video in the Classroom

This session will provide strategies for teachers to effectively use instructional video as a motivational tool in the classroom. The environment of students today is fast-paced and high tech. Teachers are constantly competing against very stimulating multimedia in the form of television, movies, and video games for student attention. Background information on instructional video, step-by-step methods, and examples of student written and produced videos will be provided.

The Planned Outcomes for Using Video Technology in the Classroom

- To identify a wide range of academic subjects, social skills, and behavioral topics appropriate for instructional video projects at the elementary and secondary levels.
- To teach students about current video technology and provide hands-on practice situations for them to use current technology in the classroom.
- To design and develop activities that can be used in the classroom to integrate video technology for students at different achievement levels and for diverse cultural populations.
- To identify and design creative uses of video technology which develop students' skills in problem-solving, decision-making, and cooperative group activities.
- To motivate students to achieve their highest potential in school while enhancing personal and social productivity.

Two Major Concerns with Using Technology

1. Too hard and confusing to use
2. Have to change entire curriculum

Goals for Using Technology in the Classroom

- To motivate students.
- To demonstrate teacher use of technology.
- To require technology-based assignments.

Purpose for Using Technology in the Classroom

- To enhance *existing* curriculum.
- To help students to be more comfortable with technology.

Process for Creating Instructional Video

1. Discuss use of cameras:
    - Care and safety rules
2. Practice with the cameras.
3. Decide on a topic for videos.
4. Write scripts.

    Plan out . . .

    - Time in minutes and seconds.
    - Shot angles.
    - Action of the actors.
    - Speech of the actors.
5. Practice and memorize parts.
6. Practice some more. ☺
7. Videotape the script.
8. Edit the videotape.

Video Samples

Exercises for Guided Practice

The purpose of this section is to give students specific short assignments to help them become familiar with using the video camera. The guided practice exercises would take place in the classroom under the teacher's direction. The following suggestions can be modified at the teacher's discretion:

1. Individually, have students write a script describing their favorite hobby or free-time activity. Videotape the verbal description of the hobby.
2. Individually, have students write a script introducing and telling a little bit about their other family members. Videotape the introductions. Have students draw a poster depicting their family members.
3. In pairs, have students write a script introducing one classmate to another. Videotape the introduction.
4. In pairs, have students write a script that will tell the rest of the class how to play their favorite board game. Then have the other students watch the video and follow-up by playing the game.
5. In small groups, have students write a script for a charade game. Videotape the charades. Then use the tape rather than the live acting and allow the students to guess the charade.
6. In small groups, have students write a script for a short skit depicting methods that could be used to reduce vandalism in their school. Then, follow-up by watching the videos and creating posters to further illustrate each video. Play the videos on a continuous loop in an area of the school where other students can stop and watch. Put the posters up, too.

Exercises for Independent Practice

The purpose of this section is to give students short assignments to help them become familiar with using the video camera in an independent situation. The independent practice exercises would take place outside of the classroom. The following suggestions can be modified at the teacher's discretion:

1. Individually, have students write a script describing their favorite room in their house. Videotape the verbal description of the room in the room at home.
2. Individually, have students write a script describing their route to school and back each day. Have students draw a map that depicts the route, then videotape it.
3. In pairs, have students write a script introducing their town to a stranger. Videotape the introduction at different places in the town, possibly interviewing relevant professional personnel at different sites.
4. In pairs, have students write a script that will tell the rest of the class how to obtain a card at the public library (or open a savings account at the bank, or apply to a college). Then go to the library (bank or college scene) and videotape each step of the process. Have students bring blank forms or other relevant paperwork to class to show along with the videotape.
5. In small groups, have students write a script for a holiday skit. Videotape the skit. Have students write a short program to accompany the holiday skit, then use the videotape and programs to present the skit to different classes.
6. In small groups, have students write a script for a short skit depicting a method that could be used to address a problem for peers in their school or neighborhood. Have students videotape on location. Follow-up by watching the videos and creating dialogues to further explain each video. Create posters and other forms of artwork to accompany the videos. Play the videos on a continuous loop in an area of the school where other students can stop and watch. Put the posters up, too.

Example of Assignment Sheet for Video Production

(Specific Requirements)

Purpose

To create a video production designed to decrease violence among adolescents.

Format

Each video production should last from 60-90 seconds. Think creatively! Incorporate music, jingles, catchy phrases, slogans, sound, and visual effects.

Components of the Assignment

1. Name of the video production. (_____ pts.)

   A. Include the specific area of violence the video addresses. (_____ pts.)

   B. State the specific learning outcome of the video for the adolescents. (_____ pts.)

   C. State the specific age group for which the video is most appropriate. (_____ pts.)

Script

2. Using the storyboard format, write a complete script for the video including speech, camera shots, timing, action, and all effects included. (_____ pts.)

Responsibilities

3. Write a specifically detailed list of each group member's responsibilities. (_____ pts.)

Parts 1, 2, and 3 must be typed, double spaced, and are due on __________________ (date).

Timeline

4. Practice, practice, practice! Plan to finish taping by __________ (date). Finished tape is due on _________ (date).

Interview

5. Create a student interview composed of 8-10 questions designed to determine students' thoughts on how adolescents themselves can work to reduce violence in their environments.

   A. Please include a typed, double-spaced copy of the exact format that will be used to interview the students.

   B. Each group member will be required to interview a minimum of five students using the motivation interview.

Example of Assignment Sheet for Video Production
(More Open Requirements)

Purpose

To create a video production designed to motivate students to demonstrate more appropriate behavior and/or to achieve at higher levels.

Format

Each video production should last from 1-5 minutes. Think creatively! Incorporate music, jingles, catchy phrases, slogans, sound, and visual effects.

Components of the Assignment

1. Name of the video production. (______ pts)
    - A. Include the subject area the video addresses. (______ pts.)
    - B. State the general learning outcome or purpose of the video. (_____ pts.)
    - C. State the age group for which the video is most appropriate. (_____ pts.)

Script

2. Using the storyboard format, write a complete script for the video including speech, camera shots, timing, action, and all effects included. (_____ pts.)

Responsibilities

3. Write a specifically detailed list of each group member's responsibilities. (_____ pts.)

Parts 1, 2, and 3 must be typed, double spaced, and are due on ____________________ (date).

Timeline

4. Practice, practice, practice! Plan to finish taping by ____________ (date). Finished tape is due on _________ (date).

Interview

5. Create a student interview composed of 8-10 questions designed to determine how teachers can better motivate students to demonstrate more appropriate behavior and achieve at higher levels in school.
    - A. Please include a typed, double-spaced copy of the exact format that will be used to interview the students.
    - B. Each group member will be required to interview a minimum of five students using the motivation interview.

Blank Storyboard Format

Storyboard Script				
Speech	Action	Camera Shot	Special Effects	Time

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Opening Scene of a Completed Storyboard Format

Storyboard Script				
Speech	Action	Camera Shot	Special Effects	Time
No speech during opening shot.	Opening scene shows five adolescents all dressed in mainly black and red hanging around on the front porch of a big old ramshackle white house.	Wide camera shot from a distance, then zoom in to focus on each individual's face.	Begin with a still picture of the street and the individuals with a painting color filter over the lens. Fade out filter as camera focuses on the first face. Gangster Rap music plays in the background and fades out as the leader of the gang starts talking. As he finishes speaking, fade into back flashes of past rival gang battles; drive-by shooting with gangster rap music punctuated by gun shots.	8 seconds
One individual begins speaking, "I am sick of all the GDs moving into our territory. It is time to teach them a lesson about who rules 74th and Hoover."	As he starts talking, the other four gather around making affirmative comments that show agreement with his words.	Close-up on the faces of the gang gathered around the leader who is speaking.	Gangster Rap music playing in the background, coming from a boom box sitting on the porch where the gang is congregated.	14 seconds (for speech of the leader) (45 seconds for back flash of drive-by shooting)
As they are talking, an obviously older individual drives up, not wearing the gang colors and greets the gang members on the porch. As they flash handsigns, he says, "Come on, you guys . . . you know I'm not one of the gang anymore. I have to stay out of the fighting. I want to get an education. I have to be able to keep my job at the gas station if I want to go to college. I came here to tell you that there's talk that the GDs want . . ."	The other gang members throw gang handsigns as a greeting and act happy to see him, but then show obvious disgust when he tells them he is sticking to his decision to stay out of gang activity.	Wide shot of the gang with a close-up of the new guy who drives up and gets out of the car.	Gangster Rap music continues to play in the background.	25 seconds
	The group starts muttering comments under their breath as he says he is no longer one of the gang.	Close-up on the new guy while he is talking, then wider angle to get the reactions of the other gang members as he says he is no longer one of the gang.	As the new guy says he will not be part of the violent activity, and tells them what he heard about the GDs, the actors freeze and the painting filter comes over the screen.	15 seconds

Early Childhood Behavioral Assessment

Dr. Cecelia Benelli

Ameritech

WIU Western Illinois University

Tools for Teaching with Technology

The WIU Approach to Integrating Technology into Teacher Education

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Early Childhood Behavioral Assessment

Dr. Cecelia Benelli, Department of Elementary Education and Reading

Module Context

Course Description

ECH 474 - Early Childhood Assessment. Intensive investigation of techniques and tools for assessing the developmental level of children from birth through eight. The development and administration of behavioral scales and the interpretation of results will be required.

Course Prerequisites

None

Recommended Core Modules To Complete Prior to This One

"Interactive Multimedia for the Classroom"

Other Relevant Student Characteristics

Early childhood education majors

Module Focus

Title of the Module

Early Childhood Behavioral Assessment

Content Area of the Module

Early childhood assessment

Description of the Module

This module provides experience in using a software program, and the Apple Newton Personal Digital Assistant (PDA) for observational assessment. With *Learner Profile*, students are introduced to an assessment tool that enables teachers to plan, organize, and review observations about children's progress and the work they produce.

Ameritech Student Outcome(s) Supported

- To use communication technologies to enhance parental involvement and administrative effectiveness within the schools.

- To use communications technologies to enhance personal and professional productivity.

Specific Module Objectives

- To enhance students' classroom observation skills.

- To enhance the ability of students to identify relevant, observable learning outcomes.

- To provide students with experience using a software program designed for observational assessment.

Technology Competencies Developed Through the Module

Awareness

Students will become familiar with the software and hardware available to support teacher assessment responsibilities.

Hands-On Experience

Students will use an Apple Newton and Macintosh computer in conjunction with *Learner Profile* software to record and organize observations of children's learning. They will then use that data to plan appropriate learning activities.

Skills Development

Students will use computer software to observe, record, and document children's learning and/or development.

Module Contents

Teaching Strategies

The instructor will teach students how to use *Learner Profile* software through classroom demonstrations and supplementary print materials (see Supplementary Materials).

Learning Strategies

Students will work in small cooperative groups to identify which learning outcomes are relevant to observe and to enter these into the database. Students will then observe children in the Infant and Preschool Center (or other available classrooms) and use the Apple Newton PDA to record their observations. Groups will be responsible for downloading data to a computer and then developing reports based on the data.

Ways Students Will Demonstrate Competency/ Assessment

Students will submit a summary report of observations generated with *Learner Profile*. Groups will make presentations to the rest of the class analyzing and evaluating their experiences using the software.

Ways Students Will Learn How To Use Technology in Their Classrooms

As part of instruction in the use of *Learner Profile*, students will learn how to involve children in self-assessment based on the identified learner outcomes.

Module Implementation

Equipment/Technology Needed

Students need access to an Apple Newton and a Macintosh computer.

Software or Other Electronic Media Needed

Students will have access to *Learner Profile* software, which is published and distributed by Sunburst Communications.

Supplementary Materials

Learner Profile

Learner Profile is an assessment tool that assists teachers in planning, organizing, and reviewing observations about students' progress and the work they produce. It consists of planning, analyzing, and recording software. Using an Apple Newton and a list of user-created observables, classroom observations may be recorded instantly. *Learner Profile* may be used in classroom grade levels ranging from prekindergarten through high school.

The *Learner Profile* package includes a disk with more than 700 observables that can be imported into the *Learner Profile* database. The observables disk includes 18 content area files. A word processor may be used to edit or change the observable or the quantifier set so that the observables are appropriate for the specific classroom or school. The content areas include Dance, Drama, Language Arts, Listening, Life-Long Learning, Math-Early Primary, Math-Primary, Music, Physical Education, Reading, Science, Social Awareness, Social Studies, Technology, Visual Art, Visual Representation, and Writing.

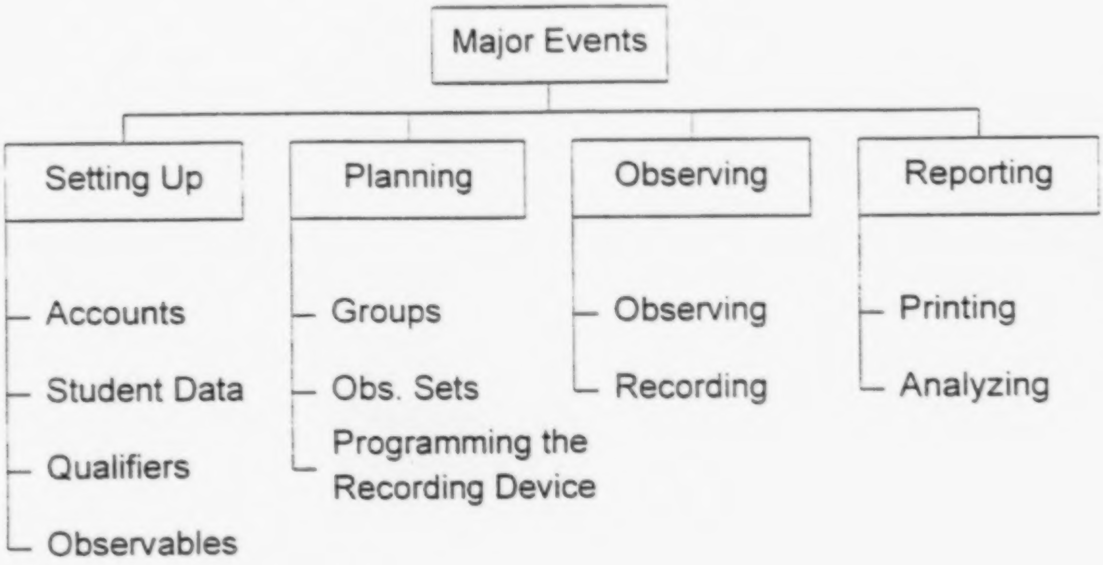
Learner Profile includes ten types of reports with various selection and arrangement features. The reports include Attendance, Awards, Daily Summary, Observation List, Comment List, Observation Frequency, Observation Summary, Qualifier Achieved, Student Transcript, and Database Usage.

Learner Profile Activities and Assignments

1. Using the *Learner Profile* database, we will develop a collection of observables for each of the following grade levels: prekindergarten, kindergarten, first, second, and third.
2. In assigned groups, observe five children at one of the above grade levels. You will be allowed to check out the Newton for the day of your observations.
3. Observational data will be uploaded and an observation summary report will be created. In addition, suggestions for follow-up activities or lessons based on the observational data should be provided. You will need to schedule an appointment with the instructor in order to upload the data and create the report.
4. At the first class period after completion of your observations, your group will make a brief oral report to the class. You are to describe your experiences using the Newton for observations and share your observation summary report.

Learner Profile

Using Learner Profile

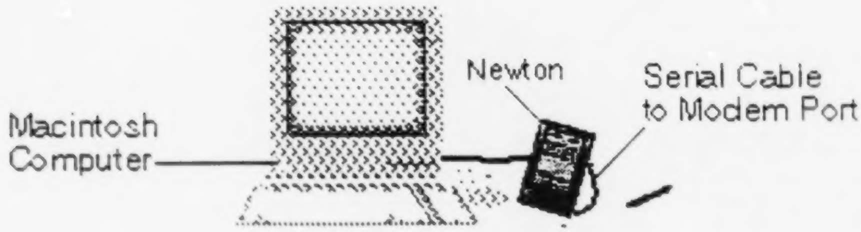


- Major Events
  - Setting Up
    - Accounts
    - Student Data
    - Qualifiers
    - Observables
  - Planning
    - Groups
    - Obs. Sets
    - Programming the Recording Device
  - Observing
    - Observing
    - Recording
  - Reporting
    - Printing
    - Analyzing

Learner Profile

▼ Using the Newton

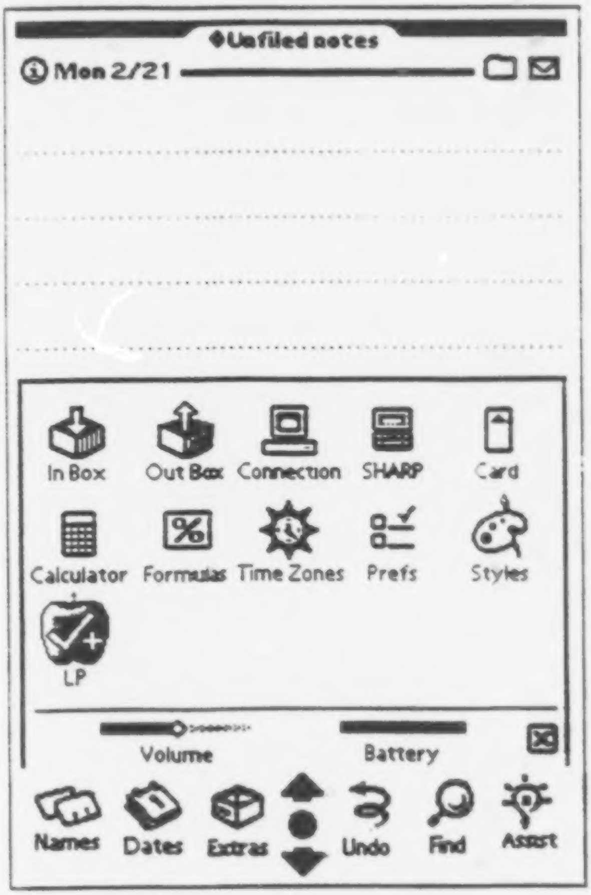
- Connect Newton to Macintosh


Macintosh Computer
Newton
Serial Cable to Modem Port

Learner Profile

▼ Using the Newton

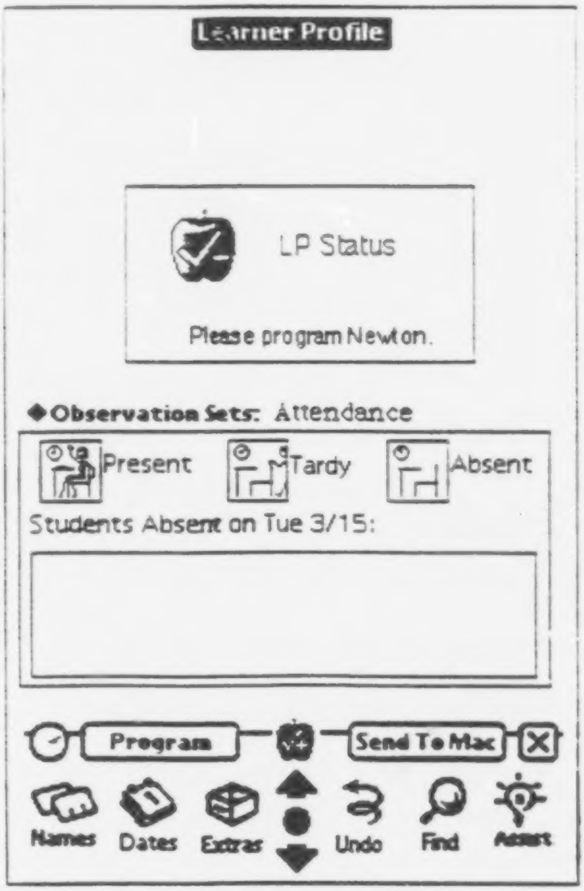
- Tap the LP Icon


◆Unfiled notes
Mon 2/21
In Box
Out Box
Connection
SHARP
Card
Calculator
Formulas
Time Zones
Prefs
Styles
LP
Volume
Battery
Names
Dates
Extras
Undo
Find
Assist

Learner Profile

Using the Newton

- Program the Newton by tapping Program Button



Learner Profile

LP Status

Please program Newton.

◆ **Observation Sets:** Attendance

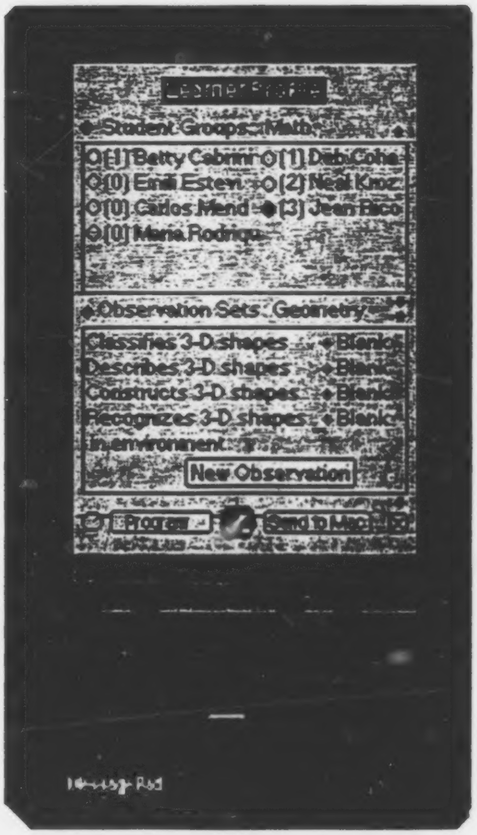
Students Absent on Tue 3/15:

Present
Tardy
Absent
Program
Send To Mac
Names
Dates
Extras
Undo
Find
Assist

Learner Profile

Using the Newton

- Disconnect the Newton
- Take anyplace to record observations



Learner Profile

◆ Student Groups : Math

○ [1] Betty Cabrini ○ [1] Deb Cohe

○ [0] Emil Estevi ○ [2] Neal Kroz

○ [0] Carlos Mend ● [3] Jean Rico

○ [0] Maria Rodrigu

◆ Observation Sets : Geometry

Classifies 3-D shapes ◆ Blank

Describes 3-D shapes ◆ Blank

Constructs 3-D shapes ◆ Blank

Recognizes 3-D shapes ◆ Blank

in environment

New Observation
Program
Send to Mac
MessagePad

344

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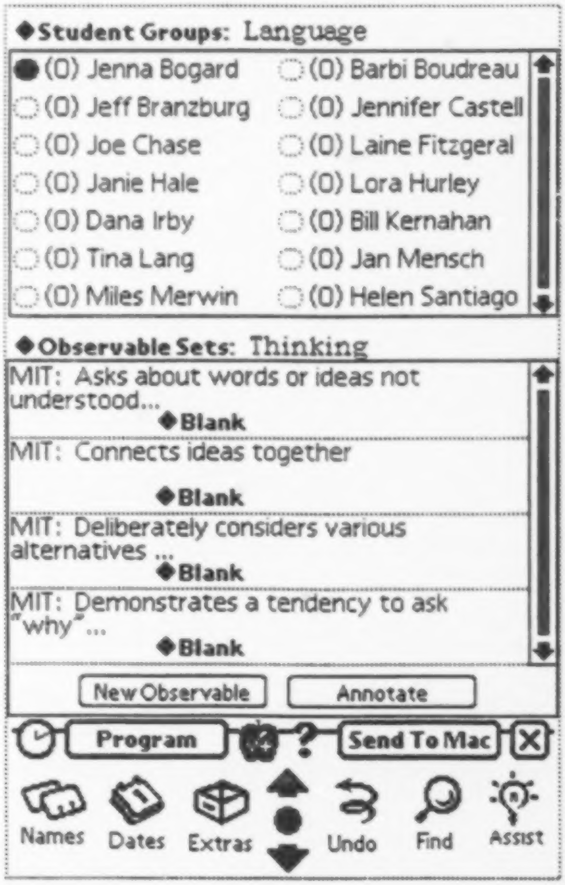
Learner Profile

▼ Learner Profile Newton

- Student Groups in Top Window
    - Tap Diamond beside Student Groups
    - Select the group by tapping the name
- Observable Sets in Bottom Window
    - Tap Diamond beside Observation Sets
    - Select the set by tapping the name
- Page Up/Down
- Preferences
- Help
- Close Window
- Date
- Battery
- Buttons
    - Program
    - Send to Mac



◆**Student Groups:** Language

● (0) Jenna Bogard
○ (0) Jeff Branzburg
○ (0) Joe Chase
○ (0) Janie Hale
○ (0) Dana Irby
○ (0) Tina Lang
○ (0) Miles Merwin
○ (0) Barbi Boudreau
○ (0) Jennifer Castell
○ (0) Laine Fitzgeral
○ (0) Lora Hurley
○ (0) Bill Kernahan
○ (0) Jan Mensch
○ (0) Helen Santiago

◆**Observable Sets:** Thinking

MIT: Asks about words or ideas not understood... ◆**Blank**

MIT: Connects ideas together ◆**Blank**

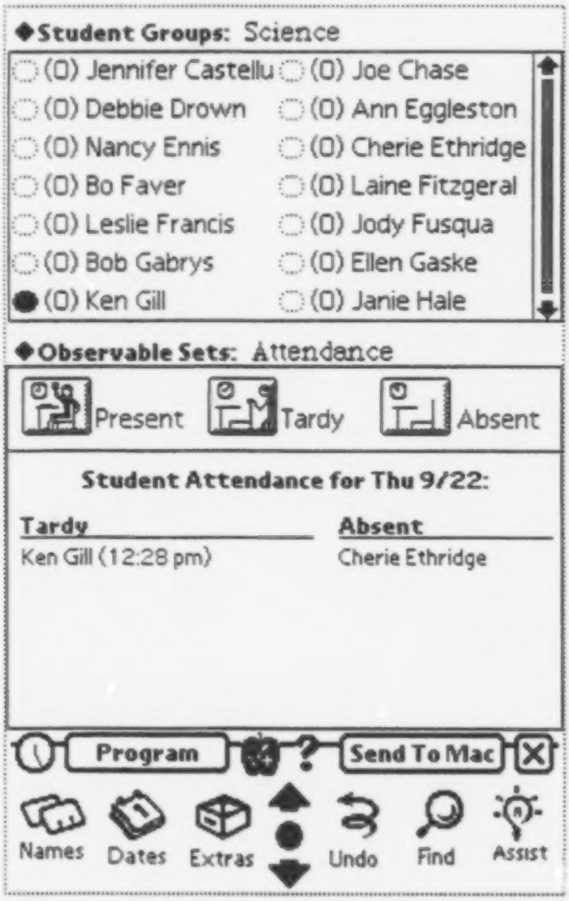
MIT: Deliberately considers various alternatives ... ◆**Blank**

MIT: Demonstrates a tendency to ask "why" ... ◆**Blank**

Learner Profile

Taking Attendance

- Select the Student Group
- Select the Observable Set: Attendance
  - Tap Student Name
  - Tap Absent or Tardy



◆**Student Groups:** Science

○ (0) Jennifer Castellu
○ (0) Joe Chase
○ (0) Debbie Drown
○ (0) Ann Eggleston
○ (0) Nancy Ennis
○ (0) Cherie Ethridge
○ (0) Bo Faver
○ (0) Laine Fitzgeral
○ (0) Leslie Francis
○ (0) Jody Fusqua
○ (0) Bob Gabrys
○ (0) Ellen Gaske
● (0) Ken Gill
○ (0) Janie Hale

◆**Observable Sets:** Attendance

Student Attendance for Thu 9/22:

Tardy	**Absent**
Ken Gill (12:28 pm)	Cherie Ethridge

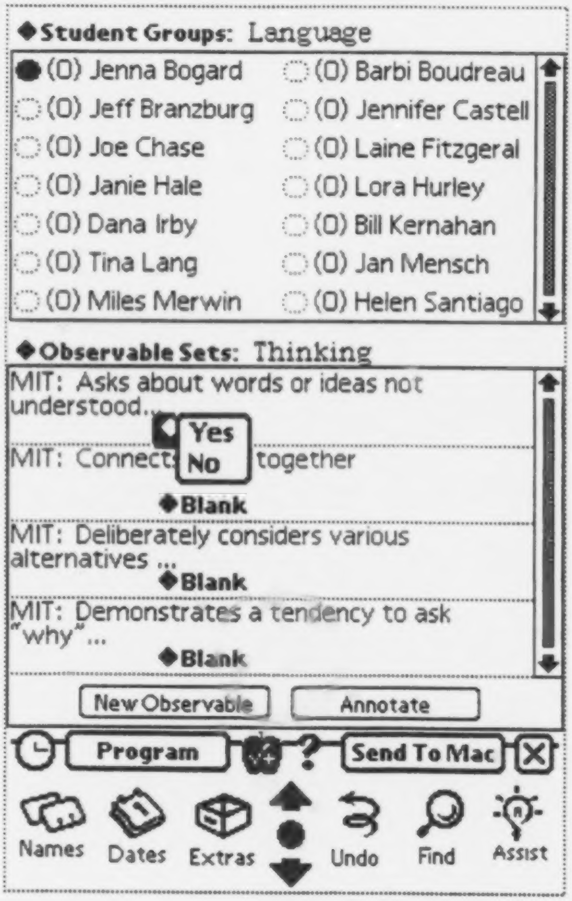
Present
Tardy
Absent
Program
?
Send To Mac
Names
Dates
Extras
Undo
Find
Assist

346

Learner Profile

Recording Observations

- Record observations by tapping
  - Student Name
  - Diamond beside Observable
  - Qualifier



◆**Student Groups:** Language

● (0) Jenna Bogard ○ (0) Barbi Boudreau
○ (0) Jeff Branzburg ○ (0) Jennifer Castell
○ (0) Joe Chase ○ (0) Laine Fitzgeral
○ (0) Janie Hale ○ (0) Lora Hurley
○ (0) Dana Irby ○ (0) Bill Kernahan
○ (0) Tina Lang ○ (0) Jan Mensch
○ (0) Miles Merwin ○ (0) Helen Santiago

◆**Observable Sets:** Thinking

MIT: Asks about words or ideas not understood...
Yes
No

MIT: Connect... together
◆**Blank**

MIT: Deliberately considers various alternatives ...
◆**Blank**

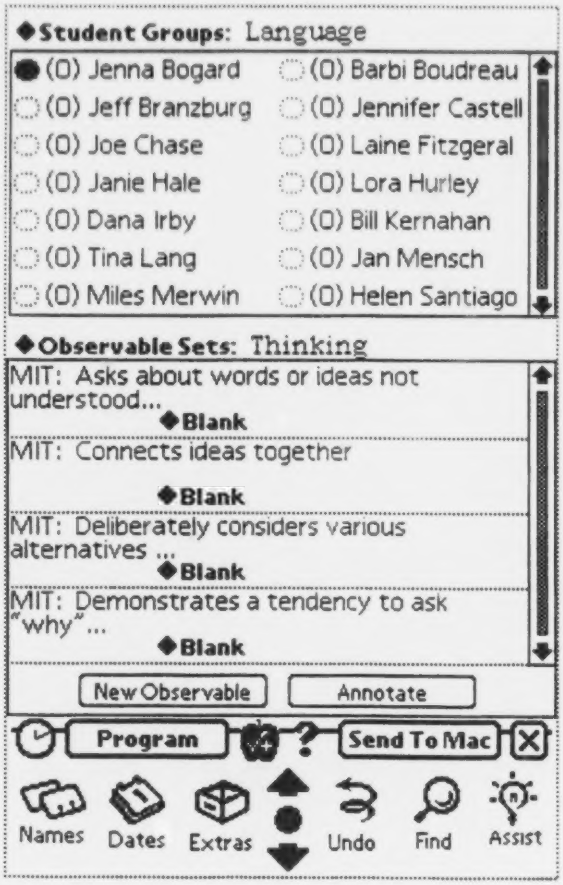
MIT: Demonstrates a tendency to ask "why" ...
◆**Blank**

New Observable
Annotate
Program
?
Send To Mac
Names
Dates
Extras
Undo
Find
Assist

Learner Profile

Unplanned Observations

- Recording an unplanned observation
  - Tap New Observable Button
  - Print, Write, or Use Newton Keyboard
  - Tap Qualifier Set, Tap Save
  - Record Observation



◆**Student Groups:** Language

● (0) Jenna Bogard
○ (0) Jeff Branzburg
○ (0) Joe Chase
○ (0) Janie Hale
○ (0) Dana Irby
○ (0) Tina Lang
○ (0) Miles Merwin
○ (0) Barbi Boudreau
○ (0) Jennifer Castell
○ (0) Laine Fitzgeral
○ (0) Lora Hurley
○ (0) Bill Kernahan
○ (0) Jan Mensch
○ (0) Helen Santiago

◆**Observable Sets:** Thinking

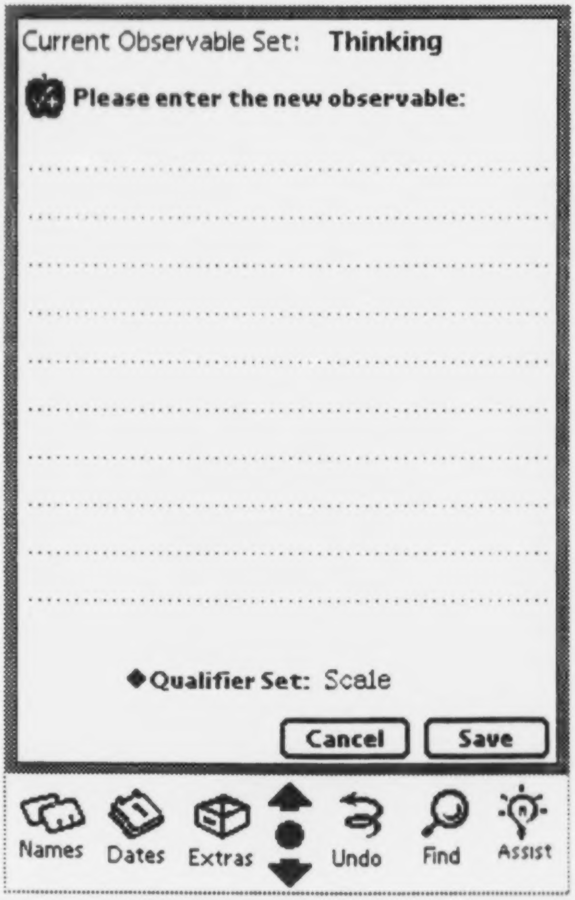
MIT: Asks about words or ideas not understood... ◆**Blank**

MIT: Connects ideas together ◆**Blank**

MIT: Deliberately considers various alternatives ... ◆**Blank**

MIT: Demonstrates a tendency to ask "why"... ◆**Blank**

New Observable
Annotate
Program
?
Send To Mac
X
Names
Dates
Extras
Undo
Find
Assist



Current Observable Set: **Thinking**

Please enter the new observable:

◆**Qualifier Set:** Scale

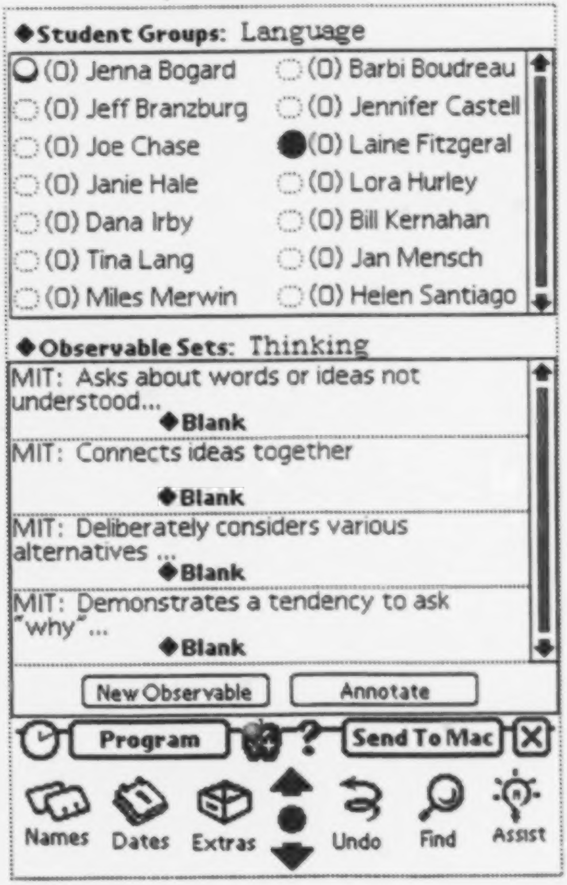
Cancel
Save
Names
Dates
Extras
Undo
Find
Assist

348

Learner Profile

▼ Annotations

- Making an Annotation
  - Record an Observation by tapping
    - Student Name
    - Diamond Related to Observable
    - Qualifier
  - Tap the Annotate Button
    - Print, Write, or Use Newton Keyboard
    - Tap Save



◆Student Groups: Language

○ (0) Jenna Bogard
○ (0) Jeff Branzburg
○ (0) Joe Chase
○ (0) Janie Hale
○ (0) Dana Irby
○ (0) Tina Lang
○ (0) Miles Merwin
○ (0) Barbi Boudreau
○ (0) Jennifer Castell
● (0) Laine Fitzgeral
○ (0) Lora Hurley
○ (0) Bill Kernahan
○ (0) Jan Mensch
○ (0) Helen Santiago

◆Observable Sets: Thinking

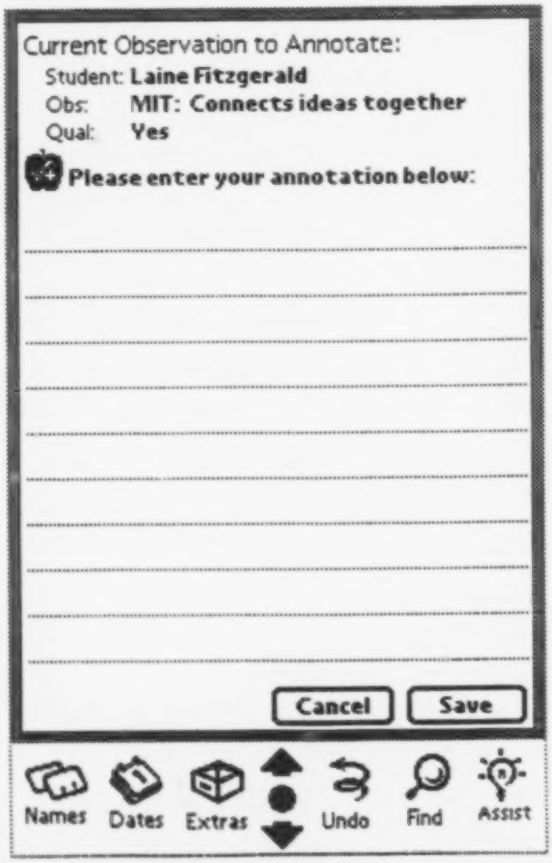
MIT: Asks about words or ideas not understood... **◆Blank**

MIT: Connects ideas together **◆Blank**

MIT: Deliberately considers various alternatives ... **◆Blank**

MIT: Demonstrates a tendency to ask "why"... **◆Blank**

New Observable
Annotate
Program
?
Send To Mac
Names
Dates
Extras
Undo
Find
Assist



Current Observation to Annotate:
Student: **Laine Fitzgerald**
Obs: **MIT: Connects ideas together**
Qual: **Yes**

Please enter your annotation below:

Cancel
Save
Names
Dates
Extras
Undo
Find
Assist

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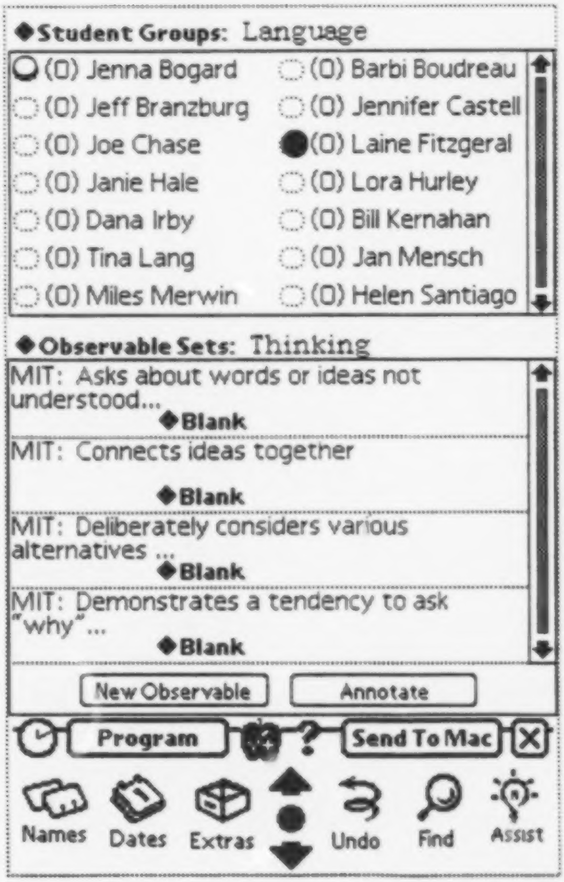
Learner Profile

▼ Student Comment

- Recording a Student Comment
  - Tap the Student's Name
  - Select the Observable Set: Student Comment
    - Tap Observation Set
    - Tap Student Comment
    - Print, Write, Or Use Newton Keyboard
    - Tap Save



◆Student Groups: Language

○ (0) Jenna Bogard	○ (0) Barbi Boudreau
○ (0) Jeff Branzburg	○ (0) Jennifer Castell
○ (0) Joe Chase	● (0) Laine Fitzgeral
○ (0) Janie Hale	○ (0) Lora Hurley
○ (0) Dana Irby	○ (0) Bill Kernahan
○ (0) Tina Lang	○ (0) Jan Mensch
○ (0) Miles Merwin	○ (0) Helen Santiago

◆Observable Sets: Thinking

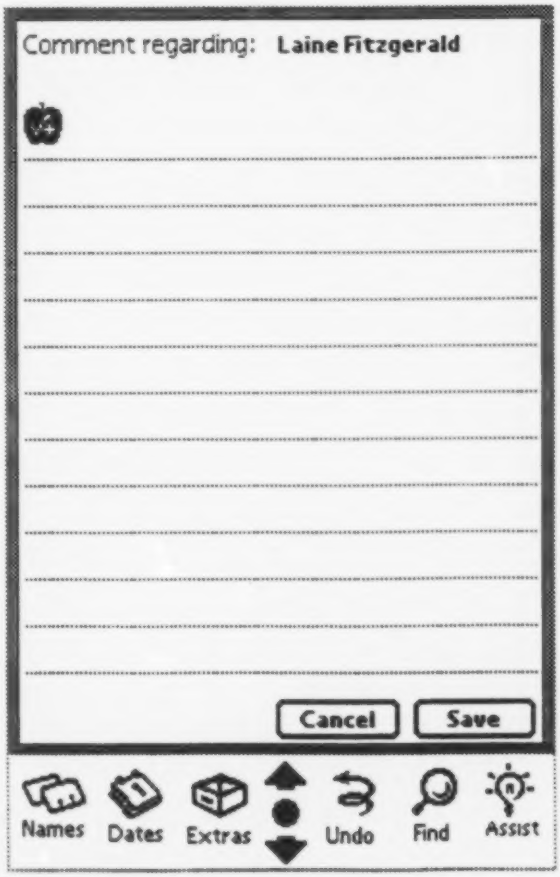
MIT: Asks about words or ideas not understood... **◆Blank**

MIT: Connects ideas together **◆Blank**

MIT: Deliberately considers various alternatives ... **◆Blank**

MIT: Demonstrates a tendency to ask "why" ... **◆Blank**

New Observable
Annotate
Program
?
Send To Mac
Names
Dates
Extras
Undo
Find
Assist



Comment regarding: **Laine Fitzgerald**

Cancel
Save
Names
Dates
Extras
Undo
Find
Assist

Learner Profile

Reporting

- Attendance
- Awards
- Observation Frequency
- Observation List
- Observation Summary
    - List
    - Bar Chart-Percentage
    - Bar Chart-Frequency
- Daily Summary
- Student Transcript
- Database Usage

Daily Summary

Group: Kindergarten-Nature
Date: 4/4/1994

Attendance Summary

Students Absent:

Students Tardy:

John Jones

Observation Summary

Observation	Qualifier	Frequency	Percentage
K-Identifies body parts	Developing	6	28.6%
	Mastering	10	47.6%
	Integrating	5	23.8%
		21	
K-Can wait his/her turn	Developing	5	71.4%
	Mastering	2	28.6%
	Integrating	0	0.0%
		7	
Prints words	Developing	1	33.3%
	Mastering	2	66.7%
	Integrating	0	0.0%
		3	
Reads word by word	Developing	5	31.2%
	Mastering	11	68.8%
	Integrating	0	0.0%
		16	
Shows sense of beginning, middle, end	Developing	0	0.0%
	Mastering	4	80.0%
	Integrating	1	20.0%
		5	
Takes risks in tasks	Developing	1	20.0%
	Mastering	2	40.0%
	Integrating	2	40.0%
		5	

Observation Summary Report

Student: Cooper, Debbie
Observations: Reading
Dates: 4/3/1994 - 4/5/1994

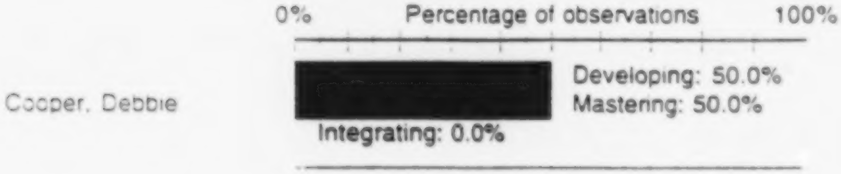
Student: Cooper, Debbie

Observation	Qualifier	Frequency	Percentage
Reads own writing	Developing	1	50.0%
	Mastering	1	50.0%
	Integrating	0	0.0%
Reads word by word	Developing	1	12.5%
	Mastering	7	87.5%
	Integrating	0	0.0%
Sounds out syllables	Developing	0	0.0%
	Mastering	3	75.0%
	Integrating	1	25.0%
Tracks from left to right	Developing	0	0.0%
	Mastering	1	50.0%
	Integrating	1	50.0%
Uses pictures for understanding	Developing	1	33.3%
	Mastering	2	66.7%
	Integrating	0	0.0%

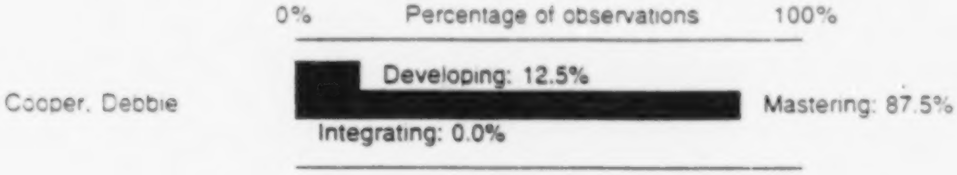
Observation Summary Report

Student: Cooper, Debbie
Observations: Reading
Dates: 12/20/1993 - 4/4/1994

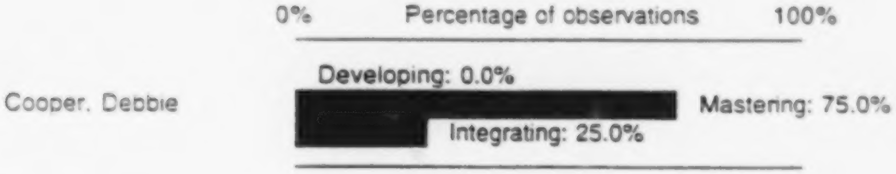
Observation: Reads own writing



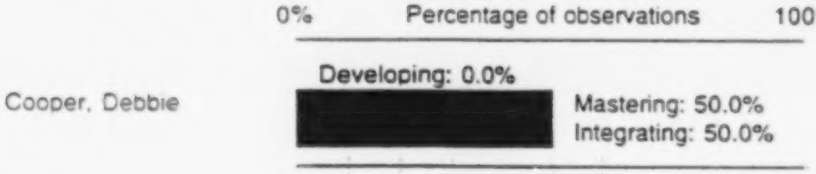
Observation: Reads word by word



Observation: Sounds out syllables



Observation: Tracks from left to right



Observation: Uses pictures for understanding

Observation Summary Report

Student: Cooper, Debbie
Observations: Reading
Dates: 4/3/1994 - 4/5/1994

Observation: Reads own writing

Student	Qualifier	Frequency	Percentage
Cooper, Debbie	Developing	1	50.0%
	Mastering	1	50.0%
	Integrating	0	0.0%

Observation: Reads word by word

Student	Qualifier	Frequency	Percentage
Cooper, Debbie	Developing	1	12.5%
	Mastering	7	87.5%
	Integrating	0	0.0%

Observation: Sounds out syllables

Student	Qualifier	Frequency	Percentage
Cooper, Debbie	Developing	0	0.0%
	Mastering	3	75.0%
	Integrating	1	25.0%

Observation: Tracks from left to right

Student	Qualifier	Frequency	Percentage
Cooper, Debbie	Developing	0	0.0%
	Mastering	1	50.0%
	Integrating	1	50.0%

Observation: Uses pictures for understanding

Student	Qualifier	Frequency	Percentage
Cooper, Debbie	Developing	1	33.3%
	Mastering	2	66.7%
	Integrating	0	0.0%

Observation Frequency

Students: Kindergarten
Observations: Body Parts
Dates: 12/20/1993 - 4/4/1994

Student	Frequency	Percentage
Barbi Boudreau	1	1.9%
Betty Cabrini	9	17.0%
Debbie Cooper	10	18.9%
Emile Estevos	2	3.8%
Garrett Goetters	2	3.8%
Jeannette Cates	2	3.8%
Jennifer Castelluzzo	5	9.4%
John Jones	7	13.2%
Jones Mary	2	3.8%
Karen Barclay	3	5.7%
Lawrence Crown	2	3.8%
L'ewis Carol	2	3.8%
Lora Hurley	1	1.9%
Paula Watkins	3	5.7%
Tina Lang	2	3.8%

Observation Frequency

Students: Kindergarten
Observations: Reading
Dates: 12/20/1993 - 4/4/1994

Observation	Frequency	Percentage
Reads own writing	6	13.0%
Reads word by word	19	41.3%
Sounds out syllables	9	19.6%
Tracks from left to right	4	8.7%
Uses pictures for understanding	8	17.4%

Observations Report

Student: Cooper, Debbie
Observations: All
Dates: 12/20/1993 - 4/5/1994

Observation	Qualifier	Date/Time	Account
Creates detailed drawings	Mastering	4/4/1994 10:03 AM	Admin
Reads own writing	Developing	4/4/1994 10:06 AM	Admin
Reads own writing	Mastering	4/4/1994 10:06 AM	Admin
Reads word by word	Mastering	4/4/1994 10:01 AM	Admin
Reads word by word	Mastering	4/4/1994 10:01 AM	Admin
Reads word by word	Developing	4/4/1994 10:02 AM	Admin
Reads word by word	Mastering	4/4/1994 10:02 AM	Admin
Reads word by word	Mastering	4/4/1994 10:06 AM	Admin
Reads word by word	Mastering	4/4/1994 10:06 AM	Admin
Reads word by word	Mastering	4/4/1994 10:06 AM	Admin
Reads word by word	Mastering	4/4/1994 10:06 AM	Admin
Shows sense of beginning, middle, ...	Mastering	4/4/1994 10:01 AM	Admin
Shows sense of beginning, middle, ...	Mastering	4/4/1994 10:01 AM	Admin
Shows sense of beginning, middle, ...	Integrating	4/4/1994 10:02 AM	Admin
Shows sense of beginning, middle, ...	Mastering	4/4/1994 10:03 AM	Admin
Sounds out syllables	Mastering	4/4/1994 10:06 AM	Admin
Sounds out syllables	Mastering	4/4/1994 10:06 AM	Admin
Sounds out syllables	Integrating	4/4/1994 10:06 AM	Admin
Sounds out syllables	Mastering	4/4/1994 10:06 AM	Admin
Takes risks in tasks	Developing	4/4/1994 10:02 AM	Admin
Tracks from left to right	Mastering	4/4/1994 10:06 AM	Admin
Tracks from left to right	Integrating	4/4/1994 10:06 AM	Admin
Uses pictures for understanding	Mastering	4/4/1994 10:06 AM	Admin
Uses pictures for understanding	Mastering	4/4/1994 10:06 AM	Admin
Uses pictures for understanding	Developing	4/4/1994 10:06 AM	Admin
Expresses ideas, information, feelin...	Mastering	4/4/1994 10:03 AM	Admin
K-Follows class routines/rules	Mastering	4/4/1994 10:05 AM	Admin
K-Follows class routines/rules	Mastering	4/4/1994 10:05 AM	Admin
K-Follows class routines/rules	Mastering	4/4/1994 10:05 AM	Admin
K-Can wait his/her turn	Developing	4/4/1994 9:58 AM	Admin
K-Can wait his/her turn	Developing	4/4/1994 9:58 AM	Admin
K-Can wait his/her turn	Developing	4/4/1994 9:58 AM	Admin
K-Can wait his/her turn	Developing	4/4/1994 9:58 AM	Admin
K-Matches shapes	Developing	4/4/1994 10:05 AM	Admin
K-Matches shapes	Developing	4/4/1994 10:05 AM	Admin
K-Matches shapes	Developing	4/4/1994 10:05 AM	Admin
K-Identifies body parts	Mastering	4/4/1994 9:56 AM	Admin
K-Identifies body parts	Mastering	4/4/1994 9:57 AM	Admin
K-Identifies body parts	Integrating	4/4/1994 9:58 AM	Admin
K-Identifies body parts	Mastering	4/4/1994 9:58 AM	Admin
K-Identifies body parts	Developing	4/4/1994 9:58 AM	Admin
K-Identifies body parts	Mastering	4/4/1994 9:59 AM	Admin

Exploring Planning Approaches for Teaching Thematically

Dr. Linda Thistlethwaite, Cindy Dooley,
Dr. Pamela Godt, and Dr. Karen Dunnagan

Ameritech

WIU Western Illinois University

Tools for Teaching with Technology

The WIU Approach
to Integrating Technology
into Teacher Education

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Exploring Planning Approaches for Teaching Thematically

Dr. Linda Thistlethwaite, Cindy Dooley, Dr. Pamela Godt, and Dr. Karen Dunnagan
Department of Elementary Education and Reading

Module Context

Course Descriptions

LA 367 - Elementary School Language Arts Methods. A study of present objectives, methods, and materials of teaching language arts, including listening, oral and written communication, spelling, and handwriting in grades kindergarten through sixth.

RDG 366 - Elementary School Reading Methods. Introduction to developmental reading, related skills, and techniques for teaching reading in grades kindergarten through sixth.

RDG 439(G) - Reading in High School and College. A course focusing on methods and materials of appraisal and instruction useful to the secondary and postsecondary teacher.

RDG 569 - Reading in Early Childhood. Designed to help teachers of preschool, kindergarten, and primary grades to plan and design developmentally appropriate programs aimed at facilitating the acquisition of pre-reading and reading abilities. Emphasis is placed on how early guidance and instructional programs can attend to all aspects of language: listening, speaking, reading, and writing.

RDG 570 - Teaching Reading in the Elementary School. A developmental course comparing various approaches to teaching reading and translating knowledge and research concerning elementary reading into recommendations for effective instruction.

SCED 364 - Elementary School Science Methods. Explores various approaches used in elementary science instruction. Emphasis is placed on contemporary programs which stress direct experience in laboratory activities.

SSED 365 - Elementary School Social Science Methods. Designed to help the future teacher to become acquainted with the various methods and techniques in the field of social studies.

Course Prerequisites

None

Additional Courses Where Module Could Potentially Fit

LIT 313 - Children's Literature
LIT 433 - Literature for the Young Adult
LIT 513 - Advanced Children's Literature
LIT 523 - Advanced Literature for Young Adults

Other Relevant Student Characteristics

Preservice and practicing elementary and secondary teachers at introductory levels at the undergraduate and graduate levels. No technical expertise is required.

Module Focus

Title of the Module

Exploring Planning Approaches for Teaching Thematically

Content Area of the Module

Reading, Language Arts, Social Studies, and Science methods for elementary and secondary teacher education majors and practicing teachers that focus on using thematic units in the classroom

Description of the Module

Thematic studies integrate learning across the curriculum and introduce students to significant topics of interest through both literature and informational texts. This module presents, via a hypermedia software application, how teachers develop thematic studies in four classroom contexts: a third-grade student-centered classroom, a fifth-grade social studies unit, a high school literature course, and a K-5 elementary school. Teachers approach developing a thematic study from a variety of directions as they address aspects of the planning process. Six aspects of this process are addressed in this module (and the software): Finding a Focus, Exploring the Topic, Finding Materials, Determining Learning Objectives, Developing Learning Opportunities, and Making Age-Appropriate Adaptations. Each teacher also solves a potential problem related to the development of a thematic study.

Ameritech Student Outcome(s) Supported

- To evaluate and use communications technologies along with computers and multimedia to support the instructional process.
- To identify resources for a wide array of academic subjects for elementary and secondary grade levels.
- To use communications technologies to enhance personal and professional productivity.
- To develop a personal plan for integrating communications technologies in the classroom.

Specific Module Objectives

- To understand key issues that must be considered when developing a theme study.
- To realize that theme studies are appropriate for all age levels.
- To realize that there is no single blueprint for the development of a theme study.
- To get a "bird's eye view" of what happens in the classroom during a theme study.

Technology Competencies Developed Through the Module

Awareness

Students develop an awareness of what it is like to learn using a computer and interactive multimedia software.

Hands-On Experience

Students acquire experience with computers and meaningful software, which are used to enhance and expand classroom content.

Module Contents

Teaching Strategies

This module can be used independently by students; no technical expertise is necessary. This module serves as an introduction to thematic teaching so that the instructor can begin specific discussion of this topic knowing that all students have the same base of information. The instructor may want her or his students to explore aspects of thematic teaching not developed in this module (e.g., evaluating student learning) or become knowledgeable about other resources to assist in the planning of thematic studies that are not addressed in this module.

A module response activity may be assigned to ensure that students have attained the course objectives. The instructor may provide a variety of learning activities to build upon the introduction provided through this hypermedia program. Students may be asked to use what they have learned from the program to identify resources for a theme study, to create an overview for a theme study, or to actually plan a theme study that is ready to implement.

Learning Strategies

Students explore a hypermedia software application in preparation for classroom discussion regarding thematic teaching. While students may initially benefit from exploring one classroom planning scenario in depth, in subsequent uses of the module they may want to explore particular aspects of thematic planning across four classroom contexts revealed in the software. For example, a student may want to look at how each of the four teachers developed the objectives for the theme study. The module may also be used as a problem-solving tool if students experience difficulty planning their own theme studies and need to review concepts addressed in the module.

Ways Students Will Demonstrate Competency/ Assessment

Students will demonstrate the ability to use a hypertext program. The instructor may also design an assessment appropriate to the course objectives.

Ways Students Will Learn How To Use Technology in Their Classrooms

Students and teachers can create hypertext programs. This module provides experience in negotiating hypertext to allow users a level of familiarity that will

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increase the likelihood of further experimentation with this type of technology.

Module Implementation

Print Materials Needed

Locating resources is addressed in the software and a more extensive listing of resources is provided as a handout for the students (see Supplementary Materials).

The Supplementary Materials also provide extended definitions of *theme* and *theme unit/cycle* and address how to invite readers to react, reflect, and respond to literature through discussion and written response. The issue of evaluating student learning is briefly examined.

Equipment/Technology Needed

Macintosh computer, with a CD-ROM drive

Implementation Recommendations

The software program/module is designed to be used independently to build an initial understanding of thematic studies and the process of designing them. Those using this module should explore all four classroom contexts to see the variety of ways that each aspect of the planning process can be approached. For example, information about "Finding a Focus" is different in each classroom scenario.

Elementary teachers will find useful information in the high school scenario as well as in the elementary scenarios.

Similarly, those wanting to understand the various ways of finding a focus for a secondary thematic study will find much useful information in the elementary scenarios.

The instructor should design a response activity for the module that relates to her or his course objectives as well as tie use of the module to course projects.

Supplementary Materials

Thematic Teaching: Two Key Definitions

One of the most important concepts of today's educational philosophy is integration. The more that a student's new learning is connected to prior learning, the deeper that learning is. Learning much about one issue is easier than learning a little about a variety of disconnected issues. One way to heighten integration of learning is through the use of thematic units/cycles.

Much of the information for this section is taken from the following source:

Montgomery, P. K. (1992). *Approaches to literature through theme*. Phoenix, AZ: Oryx Press.

Definition of a Theme

The Basic Definition

- A theme is an issue of importance.
- A theme is abstract.
- A theme is a purpose that is clear and significant.
- The theme of a work is its most important idea.

Categories of Themes

In *Approaches to Literature Through Theme*, themes are placed into four broad categories.

1. Human characteristics, traits, or emotions
   Examples:
    - honesty
    - loneliness
    - vanity
    - faithfulness
    - courage
    - loyalty/friendship
    - alienation

2. Life patterns
   Examples:
    - the journey (growing up)
    - rebellion
    - conflicts of youth
    - running away or escape

3. Symbolic representations
   Examples:
    - symbolic use of triads
    - symbolic use of trees

4. General truths
   Examples:
    - good versus evil
    - records meant to be broken
    - the meaning of success
    - the rise and fall of kingdoms
    - the need to know

The Difference between a Theme and a Subject

Many dictionaries define a theme as a topic or subject! For our purposes, they are *not* the same. Generally speaking, subjects are persons, places, events, and things. They are not abstractions. For example: At the elementary level, subjects might be bears, houses, or grandparents; and at the secondary level, subjects might be dysfunctional families, the holocaust, court trials, or magical summers.

Developing a Subject into a Theme

You can often develop a subject into a theme. Consider these subjects, *the holocaust* and *grandparents*. You might look at loyalty vs. disloyalty during the holocaust, or you might examine the importance of nurturing from the perspective of grandmothers and grandfathers.

Definition of a Theme Unit/Cycle

The Basic Definition

A theme unit/cycle is an interrelated set of materials and activities having key goals and objectives to guide the learners' exploration of a particular theme. A theme unit/cycle must be sufficiently broad to involve a number of resources and to encompass all the language arts of reading, writing, listening, and speaking.

Four Types of Theme Units/Cycles

1. Life theme studies most obviously follow the definition of theme just given.

    - Human characteristics, traits, or emotions
    - Life patterns
    - Symbolic representations
    - General truths

2. Author studies also follow the definition of theme since most authors have specific recurring life themes in their works.

3. Content theme studies are often very event-oriented.
    Examples:
    - a historical event
    - a scientific discovery

    Content themes are also frequently tied to life themes.
    Examples:
    - loyalty
    - perseverance
    - change

4. Genre studies are based on a particular literary genre. They are most frequently tied to the definition of theme under the "general truths" category of theme.
    Examples:
    - Mysteries are based on the need to find the answer
    - Science fiction often focuses on the following themes:
        - fear of unknown
        - the "good vs. evil" of scientific progress

Choosing a Theme

First, start with something easy. Generally speaking, the life themes that deal with character traits or emotions (Category A) are the easiest to begin with and the easiest to find materials for.

Second, consider places to turn for help. In the "real world" of teaching, your students will have a great deal of input into the class themes chosen. The issues that are important to them are the themes that you will want to focus on. Even so, whether you're teaching or not, you should hypothesize student interests by recalling your own childhood and adolescent interests, by talking to kids, and by talking to teachers who teach the age group that you're designing a theme study for. You should also consult manuals and curriculum guides for typical themes/content studied at particular grade levels and explore sources that tell you about these themes.

Inviting Students To React, Reflect, and Respond

Once the theme and its objectives have been considered, the next step is to plan to invite students to react, reflect, and respond. Four important aspects of this plan are (1) selecting the materials for response, (2) encouraging student response, (3) integrating all the language arts, and (4) deciding on response formats.

Materials for Response

A. When selecting materials for response, think about both the "what?" and the "who?"

1. The types of materials that you might include in the thematic study are bounded only by your imagination and their availability: poems, short stories, novels, plays, informational texts, newspaper articles, authentic documents, artifacts, films, videos, etc. Don't forget about student-written materials from past classes. And if you're working with older students, be sure to consider children's picture books; often these books are just the thing to quickly illustrate the theme.

2. Although as the teacher you will want to have many materials already selected, the students themselves should bring in additional materials that they know about. Inclusion of the "what" they recommend is one of many to encourage student ownership of the thematic study.

3. After you decide on the "what," it's time to consider the "who."

   a. Some of the selections you may want to share with the whole class.

      (1) For example, you may want to use a children's picture book, a short story, or several poems to introduce the unit.

      (2) It may also be appropriate to have the whole class read the same novel, especially if you are introducing theme studies to your students for the first time and want to provide a great deal of modeling. Just be sure that the novel is one that the entire class will be able to read. For example, *Tuck Everlasting*, a novel written for the intermediate grades, is an easy-read novel for high school students who are engaged in a study of death and immortality.

   b. Although you will certainly want to have some materials that the whole class reads or listens to, more of the reading materials will be selected for small group or individual use. In any class, some students will be much better readers than others; thus, you need to have reading selections that are appropriate for all your students.

      (1) Small groups will read different books depending upon their reading ability and their specific interest in the selections available.

      (2) You will also want to have selections for individual reading. Perhaps this will be structured, requiring students to select a material for independent reading. Or perhaps the independent reading will be in the form of an extended reading list for those who are interested in more in-depth study of the theme.

Validation of Response

After considering materials for response, you need to think about how you will encourage students to respond, setting up an environment where students are willing to share their thoughts and interpretations.

A. Students who read a poem, story, or novel often strongly disagree on whether the work is "good" or not. How a work produces an effect is at least in part a function of the background, emotional state, and maturity of the person reading it.

   1. Rather than accepting the concept that a work has a single correct meaning where the book being read (or the teachers) have all the answers, teachers who encourage literature response believe that there can be many "correct" readings of a work. This is true for a picture book for primary students or a classic for high school readers.

   2. Louise Rosenblatt calls a personal encounter with the text a transaction between the text and the reader. Rosenblatt sees a "poem"—the term she uses to refer to any text that has been transformed by a reader from black marks on a page to a work of literature—as an event. And like all events, poem-events cause their participants (the readers) to respond.

   Rosenblatt, L. (1978). *The reader, the text, and the poem* (p. 16). Carbondale: SIU Press.

B. Reader response to literature does not mean that students will simply dialogue about "whatever comes into their minds." Although reader response does involve personal ties and recollections, reader response also involves close reading and literary analysis. The "dialogue" that the reader holds may be a small group discussion experience or a written literature response log typically shared only with the teacher or one other student.

Integration of Response

To encourage students to respond openly and thoughtfully, you need to provide opportunities for students to respond across the language arts—through listening, speaking, reading, and writing.

A. In some of the thematic study experiences, students will be listening to the teacher and to each other.

B. In others, they will be sharing in a discussion or presenting something to other class members.

C. All will be reading a variety of texts, with the written response also varied.

D. Some of the best activities that you develop may include components of listening, speaking, reading, AND writing.

Selection of Format for Response

Finally, consider the various formats that you will use to have students respond. Basically, your main choices are to have a discussion focus or an activity focus. This dichotomy is somewhat artificial since discussion *is* an activity and many activities involve discussion. The following two sections provide a detailed review of issues related to group discussion as well as an explanation of a variety of kinds of activities for written response.

Discussion: One Type of Response

Discussion of literature can be either teacher or student led. Each can be beneficial and each has an important place in student learning.

A. Teacher-Led Discussion

  1. Types

    a. Teacher to Individual Student
    One type of teacher-led discussion is the individual conference—teacher-to-student talk—over materials that the student has read/studied. This is typically informal with the teacher asking a few guiding questions regarding the student's understanding of and response to the work that was read. Note the listing of Book Response Questions (Attachment 1).

    b. Teacher to Whole Class
    A more typical type of teacher-led discussion is teacher-to-student talk with the whole class; this technique is typically selected by a teacher under one or more of the following conditions:

      (1) All of the students have read the same work and the teacher feels that a whole group discussion is more efficient.

      (2) The teacher wants to maintain control of the direction of the discussion to be sure that particular points are covered.

      (3) The teacher wants to model appropriate discussion questions for students to later use in small group discussions.

  2. Encouraging Discussion

  When choosing teacher-to-students talk, the teacher must be careful that the whole class discussion does not turn out to be five or six of the class members answering the teacher's questions while the rest of the students remain uninvolved.

    a. One way of encouraging participation from more students is to have the class break into small groups to discuss questions generated by the teacher.

    b. A teacher-designed Anticipation Guide can also be used to guide discussion.

      (1) In this activity, the students first respond individually to a series of statements about the work that focus on the theme and general ideas that it appears the author intended the readers to understand. These statements are written generically, without references to specific events or characters' names. Before reading the selection, each student indicates whether she or he agrees or disagrees with the statement and then reads to determine whether the author would agree or disagree with each statement.

      (2) After reading, students share their responses and justifications in small groups. Small group discussion can take place twice if the teacher desires: first, after personally responding before the reading, and second, after reading to determine the author's response. Reporters for the small groups can then share results with the whole class.

This type of activity is teacher-directed because of the structured format but certainly has a heavy dose of student-to-student talk.

B. Student-Led Discussion (Small Groups)

Although teacher-led discussions can certainly be effective, encouraging student-led discussions with student-to-student talk allows for more extensive participation by everyone in the class. These small groups may be called cooperative learning groups, literature circles, or simply discussion groups.

1. Conditions

Small group discussion is frequently the chosen format under one or more of the following conditions:

a. The whole group has not read the same text but instead students have selected different texts with a group of typically 4-6 having chosen the same text.

b. The students have had small group discussion modeled for them and are ready to share with one another with only informal teacher monitoring.

2. Effective Sharing

In small groups, the students share their responses—their understandings and perceptions. Literature response is the sharing of the "different" stories that the class members experienced as they read the same text. Group members, including the teacher who moves from group to group, are free to say that they never thought about the work in the way one of the other group members has.

As you plan for small group literature response, you will need to consider how students prepare themselves for discussion, how small group learning during discussion can be most effective, and how the group will evaluate how effective their literature response discussion was.

a. Preparing for group discussion

Simply assigning a certain number of pages or chapters to be read is not enough to guide most literature discussion groups. Suggest to students that as they are reading independently they should think about questions that invite dialogue, they should review the theme-questions and the specific text questions that were provided by the teacher, and they should complete a "Literary Think Sheet."

(1) Questions that invite dialogue (see Attachment 1)

This "Book Response Questions" sheet is a menu for students to choose from. Some questions may be more or less appropriate for a particular work being read or a particular student reading it. You might want to display these questions in a prominent place in the classroom and then have abbreviated versions of the questions, in phrase form, on bookmarks for the students to keep with them.

(2) Review of theme and specific text questions

The listed book response questions are theme-independent. You may also want to use questions general to the theme of study or more specific questions for the particular book that a given group is reading.

(3) Student "Think Sheet"

This sheet might have the following questions:

(a) What are five key points that you would include in a summary of what has happened thus far?

(b) What else did this make you think about?

(c) What new words did you find in this section of the book? What meanings can you find for them?

(d) What passages were most interesting?

b. Teachers sharing in the discussion

Effective student-led discussions seldom just "happen" when you have students work together in small groups. Although it may seem to an outside observer that the students are doing all the work, the teacher also has much work to do.

(1) Making initial decisions

Initial decisions must be made regarding discussion objectives, size and make-up of the groups, time limits, use of materials, and clarification of the academic tasks.

(2) Modeling

(a) Students have to know what is expected of them and you, the teacher, will need to move from group to group, sharing with them and monitoring group effectiveness. Before having students work in small groups, you will need to teach the social skills necessary for working in small groups and, perhaps, after monitoring group discussions, will need to step back and reteach.

(b) Using the "fishbowl" approach is one way to model an effective small group discussion. In the procedure, the teacher and several students are seated in the center of the room, discussing a book in an appropriate or inappropriate manner. Other students seated in a circle around the discussion group observe. After the center group's discussion, observers share what they saw happening that was appropriate or inappropriate.

(3) Interacting with groups

(a) Although you certainly don't want to "take over" when you join a group, you may sometimes choose to become a contributing member and/or a resource for the students.

(b) Other times you may choose to be on the periphery, just observing.

(c) You will be making sure that students understand what they are to do and may need to provide assistance by clarifying, reteaching, or elaborating.

(d) You will also be evaluating student learning, group functioning, and your own effectiveness in your role as teacher.

c. Structuring groups

Two general approaches to discussion are suggested—one more structured and one less structured. You may find it helpful to begin with the more structured approach and then move your students to the less structured approach.

(1) One approach is to specifically assign roles and responsibilities to individual group members. Although this structured approach may lead to more stilted, less "free-flowing" discussion, students who are less capable of self-direction may find it helpful to have a specific role to play.

(a) In this type of cooperative activity, you may utilize a variety of roles. Each student has a specific role to play with the role changing from discussion to discussion.

(b) Although each group member has an assigned role, the goal is to have an interactive discussion where people playing roles is not particularly evident.

(c) See Attachment 2 for a discussion of these roles.

(2) A second approach is to have everyone generally responsible for the group having an effective discussion. Typically, each group self-selects its facilitator or one is appointed by the teacher. For this format of discussion to be effective, students must understand the characteristics of a good group participant and effective discussion must be modeled for the students.

(a) Discuss with students the characteristics of an effective group member. Although the following list is not exhaustive, it will start you thinking:

- Is prepared: shares vocabulary learned, interesting passages, points of confusion, etc.
- Doesn't monopolize the conversation
- Listens to the opinions of other group members
- Encourages the participation of group members who may not be participating
- Keeps the purpose of the discussion in focus
- Sums up what has been said so far

(b) Without specifically assigning roles or even having students select them, you may want to share the various activities discussed above so that students are aware of the various roles that they could move in and out of as their group discusses material read.

d. Evaluation of group work

As the group concludes its discussion, members should evaluate the effectiveness of their discussion. You may want to have students fill out a group evaluation form where they discuss and hopefully come to agreement on "how they did." Independently, group members can also evaluate the group's work and their own individual contributions.

Discussion: Attachment 1
Book Response Questions:
For Reading Conferences, Class Discussion, or Entries for Literature Logs

1. **Characters**
    a. Describe one character's problem or choice to be made. What advice do you have for that character?
    b. Explain why you think a character is acting as he or she is.
    c. Explain how a character felt during a particular incident. Explain how you would have reacted in that same situation.
    d. Explain which character you liked best or least. Explain why you would or would not like to have a particular character as your friend.
    e. Which character would you like to trade places with? Why?
    f. Examine the values of a character that you like or dislike.
    g. Did any of the characters seem to do anything "out of character?" What? What do you think that the character should have done instead?
    h. If you met one of the characters in the story in person, what would you want to ask him or her? What would you say or do?
    i. Are there any characters in the book who were like you? Why? In what ways?
    j. What real-life persons are you reminded of by characters in this story? Explain.
    k. How did a character change from the beginning to the end of the story?

2. **Setting**
    a. Explain why you would or would not like to have lived in the time and place of this novel.
    b. How integral was the setting to the message of the story? Explain.

3. **Predicting**
    a. From what you have read so far, make predictions about what could happen next, explaining the reasons for your predictions.
    b. Generally speaking, how have your predictions matched actual happenings?

4. **Passages**
    a. Copy a provocative/interesting/important/enjoyable passage and comment on it.
    b. Write questions about a part you had difficulty understanding. Choose one question and explore possible answers.
    c. List interesting or troublesome vocabulary and define the terms.

5. **Events**
    a. What real-life events are you reminded of by the events in this story?
    b. Did anything happen in the book that is similar to something that happened to you or to someone you know?
    c. How would you have improved the book? How would you have changed a specific part? Would you have left any part out? Which part? Why?
    d. Do you believe that everything in the book could have happened? Was the story intended to be true to life?

6. **Rereading early journal entries**
    a. Discuss what your main reactions to this book seem to be so far.
    b. Discuss changes in your reactions.

7. **Considering the entire text**
   a. Did anything about the book make it difficult for you to understand? What part of the book was most difficult for you to understand? Was the book challenging, easy, or somewhere in between? What made the reading of the book easy or difficult?
   b. What were the problems or conflicts in the book?
   c. What impressed you about the author's use of language?
   d. What do you remember most from reading the book?
   e. How would you have changed the ending? If you wouldn't change the ending, explain why you feel the ending is so appropriate.
   f. How is this book alike or different from other books by the same author?
   g. If the author were to write a sequel, what do you think might be important ideas or events of focus?
   h. Are you different now as compared to before your reading of the book? Did this book change you in any way?
   i. Did reading the book make you realize or understand anything about yourself or someone you know?
   j. Compare this book to another book that you have read—one with the same message about life; one that makes you feel the same way (or the opposite).

8. **Author**
   a. If you could meet the author, what would you like to ask him or her? What advice would you like to give?
   b. Would you read another book by this author? Why or why not?

Several ideas from the following source were included in this listing:

Kaywell, J. (1993). *Adolescent literature as a complement to the classics.* Norwood, MA: Christopher-Gordon.

Discussion: Attachment 2
Roles for Discussion Groups

Key Roles

Four important roles are described below; however, you are not limited to only these roles. If you have three- or five-person groups, you will have to reduce or expand roles. Twelve other roles are briefly noted. You may want to use them periodically. Or you may want to assign each student two roles—one a "meaty" content role and the other a skill role.

1. General facilitator/Discussion director

   This student is responsible for keeping the group on the move: for seeing that each of the other members has his or her turn, for encouraging all to be involved, and for conducting the group evaluation. This role combines some of the "other possible roles" noted on the next page. This role may also involve developing a list of questions for the group to consider during discussion.

2. Summarizer

   This student summarizes what has happened so far and asks other group members if there is anything to add. The summarizer may also quickly review the last discussion that the group had.

3. Reaction leader/Literary luminary

   This student is ready with several of her or his own reactions to the book thus far: something that wasn't clear, a comparison to something else read, insights into one of the characters, a prediction about what is going to happen next, etc. The "Book Response Questions" (Attachment 1), the general thematic questions provided by the teacher, or the specific book questions provided by the teacher will give the reaction leader a place to begin. After sharing his or her reaction, the reaction leader solicits the reactions of the other group members.

   a. This person may identify three to five passages for discussion or oral reading from different parts of the story or chapter.

   b. The literary luminary might be directed to select passages with figurative language, passages that show how a character feels, passages that show an author creating a certain mood or feeling, passages that were confusing, or passages that were in some other way memorable.

4. Vocabulary enricher/Word wizard

   This student leads the vocabulary discussion, ready with several words that she or he found that were new, and then asking other group members to share new words. Discussion should center on how students figured out the words—use of context, use of a dictionary, etc. The word wizard may also want to point out the words that stand out somehow in the reading—words that are repeated, used in an unusual way, or key to the meaning of the text.

Other Possible Roles

1. Travel tracer/Scene setter: Tracks where the action takes place, especially important if the action moves around a lot or if the characters go on some type of trip.

2. Connector: Finds connections between the material the group is reading and the world outside the text (personal/school/community life); finds connections between the text the group is reading and other poems, stories, novels, or informative texts that the group has read.

3. Illustrator: Draws some kind of picture related to the reading (sketch, cartoon, diagram, flow chart, stick figure scene, etc.).

4. Manager: Gives directions and keeps the group on task.

5. Checker: Checks on comprehension by asking group members to stop periodically and summarize discussion points.

6. Encourager: Watches to see that everyone is participating.

7. Praiser: Helps members to feel good about their contributions.

8. Prober: Asks for other possibilities or interpretations to keep the group from agreeing too quickly.

9. Reader: Reads materials aloud.

10. Writer/recorder: Records the key ideas offered by group members.

11. Materials handler/Process checker: Gets and keeps track of materials, collects assignments, makes sure everyone knows what to do for the next discussion, etc.

12. Reporter: Reports back to the larger group.

Ideas for the preceding roles are noted in the following sources:

Daniels, H. (1994). *Literature circles: Voice & choice in the student-centered classroom.* Columbus, OH: Stenhouse.

Johnson, D. W., & Johnson, R. T. (1991). *Learning together and alone: Cooperative, competitive, and individualistic learning* (3rd ed.). Englewood Cliffs, NJ: Prentice-Hall.

Slavin, R. (1991). *Cooperative learning: Theory, research, and practice.* Needham Heights, MA: Allyn & Bacon/Simon & Schuster, Inc.

Whisler, N., & Williams, J. (1990). *Literature and cooperative learning: Pathways to literacy.* Sacramento, CA: Literature Co-op.

Written Response:
A Prevalent Theme Study Activity

Written response to literature may be academic in nature or may have a creative focus. Suggestions for written responses were taken from the following source:

Simmons, J. S., & Deluzain, H. E. (1992). *Teaching literature in middle and secondary grades*. Boston: Allyn & Bacon.

I. Academic

  A. Response paper (more informal and personal than a critical essay, although it does include interpretations; centers on how the readers feel as well as on how the work stimulates them to think)

    1. Select what you believe is the most important word in a literary work and explain why it is important.
    2. Identify the character that you have the most sympathy for and explain why.
    3. Explain what character you trusted or mistrusted the most and explain why.
    4. Select a character which annoyed you or made you angry and explain why.
    5. Select which character in the work you would choose to be and explain why.
    6. Cast the book as a movie and explain who you would have play the various parts and give reasons for your choices.
    7. Explain which characters reminded you of characters in other works or persons from real life and explain why.
    8. Explain which character you would kick out of the work if you could and explain why.
    9. Describe an event that took you by surprise in the work and explain why.
    10. Select an event (what someone did) that seemed to be out of character and explain why.
    11. Explain which event(s) could have been left out of the work without destroying the story and justify your decision.
    12. Select an event that scared you and explain why.

  B. Reconstruction of the work of literature in the students' own words (recasting the ideas in their own words rather than commenting on them)

  Note: If students have difficulty thinking of something to write about, have them reconstruct. Reconstruction often stimulates response.

  C. Reading journal (record of students' responses *while* they are reading; more informal than the response paper since students are recording their responses as they experience them rather than after careful reflection)

1. Typical content

    a. A discussion of what will happen next
    b. Responses to teacher-noted questions
    c. Consideration of any of the "Book Response Questions" (Attachment 1)

2. Purpose

    Having each student keep a reading journal (literature log) is an alternative to having small group discussions. A reading journal may also be used as an "impetus" for small group discussion of a commonly read text, or if you are having students read a book independently in addition to the one chosen for small group reading. Journals are frequently used if students are not commonly reading any text.

3. Nature of the informal response

    a. Reading journals (literature logs) are not graded in the same way that formal writing is graded. Log entries are often in rough draft form.

    b. Entries *may* be in the form of letters: to the teacher, to a classmate reading the same book, or to a classmate not reading the same book.

4. Teacher response

    a. Rather than grade the reading journal or literature log responses, teachers should affirm and encourage the students. As a teacher, you can respond to log entries in a number of ways. You might agree with a point the student has made, briefly relate your own different perception, or ask a question. If students are only thinking about the people and events in the book at a surface level, you may have to gently direct them to think more critically. Nancie Atwell calls this kind of teacher response a "nudge."

    b. Guidelines

        In *In the Middle*, Nancie Atwell discusses five guidelines that she uses:

        (1) Don't get too personal.
        (2) Don't use the response to test writing. Remember this is rough draft "chat."
        (3) One good thoughtful question is enough.
        (4) Share your own experiences to confirm or extend.
        (5) Supply needed background information when it's relevant to do so.

        Atwell, N. (1987). *In the middle*. Portsmouth, NH: Heinemann.

5. Peer response

    a. Before having peers respond to one another, you may want to model different types of responses to literature logs. Perhaps a good activity would be to have students look at the responses that you have written as a teacher and have each student determine response categories. Collectively, have class members develop categories of response and categorize the various kinds of responses that you've made.

    b. Student-to-student responses sometimes naturally grow out of students passing notes back and forth about what's meaningful to them! You may find more description of

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affect, less attention to mechanics, and more sharing of the "good parts" than when students write entries directed to the teacher.

D. Letters written by the students to friends, teachers, parents, characters in the work, or the author

1. A focus on how audience awareness influences what is shared/written
2. Letters written to the same character by several members of the class to clarify how character understanding influences the style and content of the writing
3. Letters to two different characters written by the same person (difference in subject matter, detail, tone/diction)

E. Formal, critical essay

1. Extensive referencing
2. Use of quotations from the text to support points made

F. Research paper/literary criticism

1. Extended definition essays of a complex concept, character analysis, explication of a passage or longer work, etc.
2. Casebook approach where all students have access to the same articles of literary criticism
3. The thesis statement as a critical opinion which is supported in the paper

II. Creative Writing Assignments

A. Writing original works of fiction and poetry modeled on what has been read

B. Adding to or changing the original work

This type of writing, frequently referred to as dependent authorship, involves the student taking on the role of author but basing text on resources and constraints of the original text. Dependent authorship is fully described in the following source.

Adams, P. (1987). Writing from reading—"dependent authorship" as a response. In B. Corcoran & E. Evans (Eds.), *Readers, texts, teachers* (p. 121). Upper Montclair, NJ: Boynton/Cook Publishers, Inc.

1. Imaginative reconstruction: sequences of narratives to fill in gaps that exist in stories
2. Additions to the text: new adventures for a character; continuations of the text
3. Epilogue: a passage depicting the character(s) years after the story ends
4. Alteration of the text: typically a rewritten ending
5. A shift of genre
    a. rewriting the text to a "Readers Theater" approach
    b. rewriting a ballad as a short story

Some Notes on Evaluation

Evaluation of student learning during the thematic study is an ongoing experience as well as a culminating experience. When evaluating student learning, be sure to keep in mind your original goals and objectives for the unit.

Interim (Formative Evaluation)
This evaluation is ongoing throughout the theme study. Written preparation for group discussion forms (think sheets) provide evaluative information regarding student understanding of the material read. During small group work, students self-evaluate their collaborative efforts; the teacher evaluates, too. Develop self-evaluation forms for both groups and individuals to use.

Evaluation and instruction are cyclically linked. For instruction to be as effective as possible, evaluation must be ongoing. Evaluating "how it's going" so far will help provide direction for continuation/modification of the remainder of the planned unit activities.

Culminating, End-of-Unit Activities/Experiences (Summative Evaluation)
Although interim evaluation is important to the success of the thematic unit, teachers typically also have some type of end-of-unit evaluation, a culminating learning experience. This evaluation may be in the form of an "experience," a project, or a more formal measure such as a test or critical essay. A final self-evaluation of what was learned is also important.

An Experience
An experience often involves a field trip or a guest speaker. Although it would be possible to have a culminating activity that simply brought closure to the thematic unit and was not evaluative of student learning, most culminating activities are enhanced when a measure of learner evaluation is incorporated into the experience provided.

A Project
Projects usually require the design of some type of product to demonstrate learning, incorporating what was learned from a variety of reading materials and activities throughout the unit. Examples are a timeline that incorporates the events noted in a number of different reading selections, a game designed to demonstrate the understanding of the personal and social characteristics of a variety of characters/people introduced throughout the unit, or a newspaper whose articles focus on the theme of study.

More Formal Testing
If a more formal evaluation is desired, you could have students compare several viewpoints over the issue raised or have students compare similar characters important to the several books studied. Many of the ideas presented under "written expression" could be used if applied to more than a single work. This more formal evaluation may be in the form of an issue paper or an essay test.

Self-Evaluation
Although the teacher is certainly responsible for evaluating student learning, students themselves are capable of self-evaluation. Providing a means for students to assess what they believe they have learned and not learned from the theme study is very important. This has been mentioned under both interim and summative evaluation above; however, the concept warrants its own section. This self-evaluation may take the form of a checklist, a journal response, or a learner-designed report card.

Theme Bibliographies

Class Scenario #1
Thematic Study of Hawaii

Books and Periodicals

Bauer, Helen. (1960). *Hawaii: The Aloha state.* Garden City, NY: Doubleday.

Bergeron, Victor Jules (Trader Vic). (1972). *The Menehunes.* Garden City, NY: Doubleday.

Carpenter, Allen. (1966). *Enchantment of America: Hawaii.* Chicago: Children's Press.

Coe, Geoffrey. (1963). *The how and why wonder book of fish.* New York: Grosset and Dunlap.

Connell, Janet M. (1982, January). Build a volcano. *First Teacher, 3*(1), 8.

Feeney, Stephanie. (1981). *A is for aloha.* Honolulu: University of Hawaii Press.

Feeney, Stephanie. (1985). *Hawaii is a rainbow.* Honolulu: University of Hawaii Press.

Feeney, Stephanie. (1989). *Sand to sea.* Honolulu: University of Hawaii Press.

Fodor, Eugene. (1984). *Hawaii.* New York: Fodor's Travel Publications.

Gelineau, Phyllis R. (1974). *Songs in action.* New York: McGraw-Hill.

Graves, William. (1970). *Hawaii.* Washington, DC: National Geographic Society.

Hamilton, Virginia. (1988). *In the beginning.* New York: Harcourt Brace Jovanovich.

Harris, Susan. (1979). *Volcanoes.* New York: Franklin Watts.

Hawaiian phrase book. (1968). Rutland, VT: Charles E. Tuttle.

Hays, Wilma Pitchford. (1961). *The Hawaiian way.* New York: Coward-McCann.

Levathes, Louise E. (1983, November). Kamehameha: Hawaii's warrior king. *National Geographic, 164*(5), 558-599.

Lewis, Richard. (1988). *In the night, still dark.* New York: Macmillan.

Lueras, Leonard, & Chung, Nedra (Eds.). (1988). *Insight guides: Hawaii.* Singapore: APA Productions.

Marcus, Rebecca B. (1963). *The first book of volcanoes and earthquakes.* New York: Franklin Watts.

McDonald, Golden. (Margaret Wise Brown). (1946). *The little island.* New York: Doubleday.

McFall, Christie. (1959). *Hawaii.* New York: Maxton Publishers.

Merians, Deborah. (1975). *I can read about earthquakes and volcanoes.* Mahwah, NJ: Troll Associates.

Pines, Tillie S., & Levine, Joseph. (1974). *The Polynesians knew.* New York: McGraw-Hill.

Stephens, William M. (1974). *Islands.* New York: Holiday House.

Tabrah, Ruth M. (1967). *Hawaii nei.* Chicago: Follett.

Tsutsumi, Cheryl Chee. (1983, November/December). Sew in love: The Hawaiian quilt. *Aloha, the Magazine of Hawaii, 7*, 53-57.

Walker, Joyce. (1987). *Hawaii.* New York: Gallery Books.

Filmstrips
Hawaii's people: Island of contrast. (1974). Chicago: Britannica Educational Corporation.

Records
Dances of Hawaii. Bowmar, 622 Rodier Drive, Glendale, CA 91201.

Other Sources
Aloha, the Magazine of Hawaii. P.O. Box 28816, San Diego, CA 92128.

Sutherland, Joan. (1989). *Greatest hits.* London: The Decca Record Co., Ltd.

Class Scenario #2
Thematic Study of the Civil War

Useful Bibliographic Sources and Examples of Specific Selections Located

1. Colborn, C. (1994). *What do children read next? A reader's guide to fiction for children.* Detroit: Gale Research, Inc.

   Ten types of indexes are provided to help readers locate appropriate books for a thematic study. A brief annotation provides specific information about the content of each selection. The Time Period and Subject indexes were used to find books about the Civil War.

   Across five Aprils by Irene Hunt. A ten-year-old boy grows up quickly when one brother joins the Confederate army and another joins the Union.

   Which way freedom? by Joyce Hansen. The story of a young slave's struggle to create a new life for himself as he explores his newly found freedom.

2. Huck, C. S., Hepler, S., & Hickman, J. (1993). *Children's literature in the elementary school.* Fort Worth, TX: Harcourt Brace Jovanovich College Publishers.

   Thirteen chapters in *Children's Literature in the Elementary School* are divided into three sections: "Books and Children," "Knowing Children's Literature," and "Developing a Literature Program." The chapters in the second section, "Knowing Children's Literature," are organized according to genre. The plot summaries provided in the chapter describing historical fiction and biography were helpful in selecting materials for the Civil War unit.

   Nettie's trip south by Ann Turner. Ten-year-old Nettie travels from New York to Richmond, Virginia, and encounters her first experience with slavery. In her letter to her friend, Nettie describes the horrors of a slave auction.

   Brady by Jean Fritz. Brady helps transfer a slave to a new station when his father is injured in a fire and unable to fulfill his part in the underground railway.

3. Gillespie, J., & Naden, C. (1990). *Best books for children* (4th ed.). New York: R. R. Bowker.

   One-sentence summaries describe the selections in this book, which is organized according to types of literature and subject headings. Author, illustrator, title, and subject/grade level indexes can also be used to locate resources.

   Selections for the Civil War unit were found by perusing the titles in the genre section under "Historical Fiction - United States - The Civil War" and in the History and Geography section under "Geographical Regions - United States - The Civil War."

   Mountain boy by Anna Catherine Josephs. The true story of a 14-year-old boy who led Union soldiers through the mountains in South Carolina.

   The first book of the Civil War by Dorothy Levenson. The book provides an introduction to the Civil War.

4. Jensen, J. M., & Roser, N. L. (Eds.). (1993). *Adventuring with books*. Urbana, IL: National Council of Teachers of English.

   Selections are described in thirteen chapters that are organized around subject areas and types of genre. Author, illustrator, subject, and title indexes provide additional means for locating useful resources. The time period section in the historical fiction chapter and the history section of the social studies chapter indicated a number of selections that were appropriate for this thematic study.

   A separate battle: Women and the Civil War by Ina Chang. Through photographs, illustrations, quotations, anecdotes, and text, the roles women played in the Civil War are described.

   Shades of gray by Carolyn Reeder. Will, orphaned by the Civil War, views his uncle who refused to fight the Yankees as a traitor. As he lives and works with his uncle, Will comes to understand his perspective.

5. Chatton, B. (1995). The Civil War, Part I: Update. *Book Links*, *5*(1), 42-47.
   Chatton, B., & O'Laughlin, M. (1995). The Civil War, Part II: Update. *Book Links*, *5*(2), 39-46.

   Published bimonthly, each issue of *Book Links* features brief annotations of selections related to themes, topics, authors, or genres. The cumulative index published each year can be used to locate resources for a particular theme study. The September 1995 and November 1995 issues featured selections for a Civil War Unit.

Class Scenario #3
Thematic Study of an Author and/or Illustrator of Books for Children

Book Links: Connecting Books, Libraries, and Classrooms. Chicago: Booklist Publications.
This bimonthly publication is an invaluable resource for literature study across the curriculum. Each issue features a particular theme, current topic, author, illustrator, genre, and an international perspective on books for children and young adults. Each article includes annotated book recommendations, with full bibliographic information and prices for purchase. Each article also contains creative classroom connections to enhance literary and content study. This is one journal that is definitely worth its $16.95 subscription price.

Contemporary Authors Autobiography Series. Detroit: Gale Research, Inc.
Each of the over twenty volumes in print contains personally structured essays by critically acclaimed authors. Captivating personal insights into each author's life and work are presented with a photograph supplied by the author. Bibliographies and a cumulative subject index are included in each volume.

Huck, C. S., Hepler, S., & Hickman, J. (1993). *Children's literature in the elementary school* (5th ed.). New York: Harcourt Brace Jovanovich College Publishers.
Since this text's first appearance in 1961, people interested in bringing books and children together have found developmentally appropriate recommendations for children's literature selection, study, and response in its pages. Thorough discussions with rich examples for planning a literature program, integrating learning across the curriculum, and extending children's responses to literature are provided in part three of the text. This is a fine place to begin building a framework for thematic literature study.

Something about the author. Detroit: Gale Research, Inc.
With eighty volumes in print, this series offers biographical information for nearly 7,000 authors and illustrators of books for children and young adults.

The WEB. The Ohio State University, Room 200 Ramseyer Hall, 29 West Woodruff, Columbus, OH 43210.
The acronym WEB stands for Wonderfully Exciting Books. Published triannually (Fall, Winter, and Spring/Summer), this teacher-constructed teaching resource for integrated learning is devoted to reviewing children's and young adult literature and books for professional educators. Each issue offers suggestions for organizing integrated, literature-based study that teachers and students have explored with success and enjoyment.

Class Scenario #4
Thematic Study of Peace

Key Source Located by Browsing the Stacks
Durell, A., & Sachs, M. (Eds.) (1990). *The big book for peace.* New York: Dutton.

Print Sources Examined (Young Adult Focus)
Book Links: Connecting Books, Libraries, and Classrooms, a monthly Booklist publication of the American Library Association.

Although not indexed by theme, perusing *Book Links* often yields real gems! In each issue is a brief discussion of a number of new books, annotations of books by a particular author, and an editorial on a timely topic. Of special interest for those designing theme studies are sections of "Classroom Connections" that focus on a particular topic. A section on book strategies highlights discussion topics and activities for a particular selection as well as an annotated bibliography of related books.

Commentary: Children of color (multicultural literature) and South Africa beyond Apartheid were highlighted in the January 1994 *Book Links*. One of the selections, *Ajeemah and His Son*, seemed to be appropriate for the peace theme.

Berry, J. (1991). *Ajeemah and his son.* New York: HarperCollins/Willa Perlman Books.

An African slave struggles to regain his freedom after he and his son are abducted by slave traders from their African village and taken to Jamaica. Although he and his son must abandon their dream of returning to Africa, Ajeemah is granted his freedom and is able to give his newborn daughter a special gift.

Bushman, J. H., & Bushman, K. P. (1993). *Using young adult literature in the English classroom.* New York: Macmillan.

In this text, readers are introduced to the value of using young adult literature in the classroom. The authors also attend to teaching/responding strategies as well as the issues of diversity and censorship. Appendices provide sources of reviews of young adult books as well as various kinds of book lists. One particularly important chapter looks at 16 classics of literature, tying each to one to five selections of young adult literature.

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Commentary: No specific works for the peace theme were located through this source, although ideas were garnered for selections to use with other themes.

Dreyer, S. F. (1992). *The best of bookfinder*. Circle Pines, MN: American Guidance Service.

The *Bookfinder* series provides annotations of literature for children and adolescents. It is one of the most comprehensive sources available.

Commentary: At first, *The Best of Bookfinder* appeared to be a dead end. The topic "peace" was not listed in the index. When this happens, you have to dig a little deeper, thinking of other related words that selections might be indexed under.

Since the resolving of aggression sometimes leads to peace, *aggression* is a likely key word. Checking the subject heading *belonging* also yielded several possible selections. Similarly, since peacetime follows war, the key word *war* was explored and yielded several selections that might be approached from the perspective of peace.

Ashley, B. (1979). *A wild kind of justice*. New York: S. G. Phillips.

A young man, paralyzed by fear, learns where his trust can be safely placed. He learns that brave action can provide the sense of self-respect and inner peace that he desperately wants.

Bennett, J. (1981). *The voyage of the Lucky Dragon*. Englewood Cliffs, NJ: Prentice-Hall.

Quan Thi Chi never loses hope as his family faces obstacle after obstacle in their search for freedom. This book brings to life the plight of war refugees and the strength that is found in unshakable family loyalty.

Hinton, S. E. (1967). *The outsiders*. Rutherford, NJ: Viking/Penguin.

The constant conflict between Ponyboy and his friends with a group of wealthy teenagers results in envy, hate, violence, and death. Life does return somewhat to normal for Ponyboy, but he knows that he wants a better life, one where peace replaces running, hiding, and being afraid.

Little, J. (1991). *Listen for the singing*. New York: HarperCollins.

Anna helps her older brother Rudi, blinded in an accident during basic training, return to an almost normal life. She could help when others could not because she could recall her own retreat into a safe secret place inside herself where no one could reach her and knows that retreat does not bring peace.

Platt, K. (1979). *The ape inside me*. New York: HarperCollins.

Ed Hill wants to be a fighter but must learn to control the terrible temper that rises up inside him. He realizes that he'll never get anywhere until he takes charge of "Kong." The story makes a valuable distinction between the discipline required for prizefighting and untempered anger.

Reiss, J. (1976). *The journey back*. New York: HarperCollins.

It is not easy for Annie de Leeuw to rebuild her life after the war has destroyed all that was familiar to her. However, hope is present as she patiently waits for signs that she has come to where she belongs, to where she can feel at peace.

Hall, S. (1990). *Using picture storybooks to teach literary devices: Recommended books for children and young adults*. Phoenix, AZ: Oryx Press.

After a discussion of storybook analysis, the literary quality of picture storybook literature, and differentiation among the various kinds of storybooks, 30 literary devices are defined and up to 40 storybooks are listed for each device. This listing includes brief annotations of the storybooks as well as specific examples of each literary device in these storybooks. Other literary devices appropriate to teach using a particular storybook are also noted. Indexes allow the reader to access information by storybook title, author, or literary device. More than 250 titles are included.

Commentary: No specific works for this theme were located through this source, although ideas were garnered for selections to use with other themes.

Kaywell, J. (1993). *Adolescent literature as a complement to the classics*. Norwood, MA: Christopher-Gordon.

Each chapter of this text focuses on a particular literary classic that is frequently taught in the secondary school. For each classic, several selections of young adult literature are suggested as companion pieces. Synopses of the selections, teaching/responding ideas, and suggestions for helping students to see the similar underlying theme uniting the selections form the core of each chapter.

Commentary: No specific works for the peace theme were located through this source, although ideas were garnered for selections to use with other themes.

Morris, P. S. (1993). *Modern realistic fiction*. West Nyack, NY: The Center for Applied Research in Education.

The first half of this book is a listing of 38 subjects/themes with 5-20 briefly annotated selections for each. The last half of the book is a presentation of 50 literature response activities, not related to any specific selection but adaptable to many.

Commentary: The themes *personal conflict* and *war-related* yielded a number of titles that might be appropriate for the peace theme study. One is listed below.

Sorensen, V. (1984). *Miracles on Maple Hill*. New York: Harcourt Brace Jovanovich.

Moving to a childhood vacation home after Marley's father comes home from the Korean War and cannot find work helps all members of the family to develop more respect for each other and for the healing powers of nature.

Thompson, G. (1991). *Teaching through themes*. New York: Scholastic.

After an introduction to thematic teaching, three themes/subjects for younger children are detailed—People, Friendship, and Habitats—followed by three themes for young adolescents—Courage, Mystery, and Survival. Each theme has (1) an introduction, (2) selected readings with a lesson plan that includes activities and a culminating project, (3) a bibliography (including poetry sources as well as video and fine arts), and (4) a listing of related themes. Several ideas are also presented for adapting each theme to a different age level.

Commentary: No specific works for the peace theme were located through this source, although ideas were garnered for selections to use with other themes.

Previous Knowledge of Classics Focusing on this Theme
Golding, W. (1962). *Lord of the flies*. Lyndhurst, NJ: Coward, McCann & Geoghegan.

> Jack, Ralph, Simon, Piggy, and others have survived a plane crash during the war. Since no adults survived, the boys must make their own rules to follow. Themes of fear, hatred, distrust, and coming to terms with who you are and what you have become are explored.

Knowles, J. (1960). *A separate peace*. New York: Macmillan.

> Beginning with a tiny incident among ordinary boys, this story ends by being as deep and dark as evil itself. The young graduates are on the verge of serving their country in the military. As one of them remembers, "I never killed anybody and I never developed an intense bill of hatred for the enemy. Because my war ended before I ever put on a uniform; I was on active duty all my time at school; I killed my enemy there."

Picture Books To Use To Introduce the Theme (or to use when modifying the theme to use with primary children)
Bunting, E. (1990). *The wall*. Burlington, MA: Clarion Books.

> In this moving picture book, a child learns about the importance of the Vietnam War Memorial to those who don't want the world to forget the men and women who died in Vietnam. This symbol of remembrance brings a semblance of peace to the hearts of many.

Carle, E. (1977). *The grouchy ladybug*. New York: Thomas Y. Crowell.

> This disgruntled ladybug learns the advantages of sharing and getting along with others, learning that a "winner take all" attitude often results in losing rather than winning.

Gretz, S. (1991). *Duck takes off*. New York: Macmillan.

> Duck wants a peaceful, happy relationship with his friends but he keeps forgetting that they can't do some of the things that he can do. Luckily, his friends understand and know that his heart is in the right place.

Wright, B. (1981). *Like being alone*. Milwaukee, WI: Raintree.

> Eight-year-old Brenda needs to escape her large and ever-present family and find a place that is hers alone, a place where peace reigns with only the birds and her books for company.

Zolotow, C. (1963). *The quarreling book*. Scranton, PA: Harper Row.

> A quarreling chain reaction is begun by Mr. James as he kisses his wife good-bye, but the pet dog, unaffected by the weather and sharp words, reverses the situation by starting a chain reaction of pleasant events.

General References for Developing Theme Studies

Allen, D. D., & Piersma, M. L. (1995). *Developing thematic units: Process & product*. Boston: Delmar Publishers.
The authors describe the features and processes used to create three models that can be used to integrate literature within content area teaching: (1) literature supplement model, (2) literature-centered model, and (3) literature-infused model. Examples of units using each of the three approaches are provided.

Cecil, N. L., & Lauritzen, P. (1994). *Literacy and the arts for the integrated classroom: Alternative ways of knowing*. New York: Longman.
This text is based on Howard Gardner's Theory of Multiple Intelligences and focuses on ways to integrate the arts with a multitude of other subject matter areas, especially for young children. Some of the chapters focus on art and children's literature, drama, poetry, singing, and music creation, as well as appreciation, dance, and photography as ways to deepen children's knowledge of the world. Each chapter provides suggestions for projects and questions for journal writing and discussions.

Fredericks, A. D., Meinbach, A. M., & Rothlein, L. (1993). *Thematic units: An integrated approach to teaching science & social studies*. New York: HarperCollins College Publishers.
As is mentioned in the title, this book focuses on how teachers can prepare themes related to the fields of science and social studies, but the book has lots of helpful information that is useful for anyone involved in thematic instruction. The book covers a variety of themes at both primary and intermediate levels and contains some very helpful sample letters (such as one to send to parents requesting materials donations); lists of community resources, including people to serve as guest speakers in the classroom; and helpful planning charts, including lists of questions "to ask myself" before, during, and after thematic units, for the teacher as well as for the children. It also has a nice group data sheet to help children keep information organized as they are gathering it.

Kastern, W. C., & Clarke, B. K. (1993). *The multi-age classroom: A family of learners*. Katonah, NY: Richard C. Owen Publishers.
This book defines and describes multi-age classrooms as a "family of learners." It is based on the first-hand experiences of one teacher who had the same classroom of children for four years in a row (K-3). The chapters deal with the benefits of multi-age grouping, different age groupings commonly used, and problems and issues with which school personnel and parents have to deal. The last chapter is in the form of six questions teachers and parents most frequently ask followed by responses. In addition to its own list of references, the book ends with a list of related readings.

Pappas, C. C., Kiefer, B. Z., & Levstik, L. S. (1995). *An integrated language perspective in the elementary school*. White Plains, NY: Longman.
This resource includes a wealth of activities and suggestions for integrating the language arts and other content areas within thematic units. Examples of thematic studies and daily schedules for their utilization are outlined. The in-depth discussion of teacher and student roles in an integrated language classroom provide concrete recommendations for creating an effective student-centered classroom.

Thompson, G. (1991). *Teaching through themes*. New York: Scholastic.
This book provides helpful information linking children's literature selections to specific themes for both younger (People, Friendship, and Habits) and older children (Courage, Mystery, and Survival). There are four to six selected readings to go along with each theme as well as a culminating activity, bibliography, and list of related themes. The book is easy reading for busy teachers.

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Van Vliet, L. W. (1992). *Approaches to literature through genre.* Phoenix: Oryx Press.
Each chapter discusses a particular genre of literature that may be used in a thematic study. Background information about the genre and a particularly relevant element of literature are provided. Recommended titles for teaching the genre are suggested. Teaching tips, activities, and suggestions for ways to focus on communication and critical thinking skills are provided. Nonprint resources are listed at the end of each chapter.

Walmsley, S. A. (1994). *Children exploring their world: Theme teaching in elementary school.* Portsmouth, NH: Heinemann.
The author describes how to use themes to teach the content of the elementary school curriculum in the first half of the book. Suggestions for developing and implementing a theme through materials, activities, and teaching routines are provided. Approaches to assessing student learning in thematic units are described. In the second half of the book, specific theme units for students in kindergarten through sixth grade are presented.

Weaver, C., Chaston, J., & Peterson, S. (1993). *Theme exploration: A voyage of discovery.* Portsmouth, NH: Heinemann.
This book is, in the words of the authors, "a theme exploration project that grew." The book was written by three teachers including a university English professor, a children's literature expert, and a fourth grade classroom teacher who were all exploring how to create optimal whole language classroom environments for their students. The book is aimed at "upper elementary" grade levels, but has a special focus on first and fourth grades. The book covers unsuccessful as well as successful attempts at getting their students interested in a variety of subjects and is "the closest thing to confessional writing we have ever published." Some of the most insightful parts of the book are entitled "False Starts" and "Great Ideas Abandoned." Three appendices contain (1) information on Whole language, (2) the fourth-graders' play, and (3) criteria for evaluating children's books as well as a sample collection dealing with snow and winter. A very readable text for all teachers interested in starting to use thematic instruction with their classes.

Your First Trip on the Internet

Dona Walzer

Ameritech

WIU Western Illinois University

Tools for Teaching with Technology

The WIU Approach
to Integrating Technology
into Teacher Education

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Your First Trip on the Internet

Dona Walzer, Department of Information Management and Decision Sciences

Module Context

Course Description

This module is used in the Vocational Education Methods course at Western Illinois University. This required methods course is taken by all agriculture, business, family and consumer science, and industrial technology education students. The course is designed to prepare vocational students to become effective teachers in the Education-to-Career programs.

Course Prerequisites

Preprofessional students take this course after their introductory College of Education and Human Services core courses and before student teaching.

Recommended Core Modules To Complete Prior to This One

By the time the students begin this module, they are expected to have some experience with basic Windows features; this can be accomplished through completing Computer Science 101, workshops, or through personal experience.

Additional Courses Where Module Could Potentially Fit

This module can be used in any other course where students have some Windows experience and even in teacher workshops.

Module Focus

Title of the Module

Your First Trip on the Internet

Content Area of the Module

This module covers the following topics:

- Definition of Internet
- World Wide Web
- Netscape
- News groups
- Discussion groups
- Eudora

Description of the Module

The original version of this module was written in the "pre-browser" era, when access to the Internet was through the use of Telnet. With the current availability of the Netscape and Eudora programs and the accompanying on-line documentation, we are now able to use these resources for introducing students to the Internet.

This module is constantly changing because the Internet and the programs used on the Internet are constantly changing. The module is based on the Netscape browser and Eudora e-mail programs available to the students at the university. This introduction to the Internet quickly covers the various features available to users. Students are expected to incorporate the resources available on the Internet in completing their unit plan outside of class.

Ameritech Student Outcome(s) Supported

- To evaluate and use communications technologies along with computers and multimedia to support the instructional process.
- To identify resources for a wide array of academic subjects for elementary and secondary grade levels.
- To design and develop learning activities that integrate computing and communications technologies for students at different achievement levels, including gifted and those with disabilities, and for diverse cultural student populations.
- To identify or design creative uses of telecommunications which develop student skills in problem solving, decision making, data collection, self-paced instruction, research, and communications.

Specific Module Objectives

- Students will explore the various features of the Internet, including URL addressing, links to Web sites in their field of study, news/discussion groups, Web searches, and e-mail.
- Students will develop learning activities appropriate for their teaching unit plan using any of the sources on the Internet.

- Students will be able to use the Internet as a tool for instruction and feel confident in their ability to incorporate its use in any subject area.

Technology Competencies Developed Through the Module

Awareness
Students will become aware of resources available via the Internet that support teaching vocational courses in the K-12 environment.

Hands-On Experience
Students will learn how to utilize Internet browsing and e-mail tools to locate resources and share ideas with each other.

Module Contents

Teaching Strategies
The instructor will demonstrate and explain various aspects of the Internet while the students observe and explore at their own computers.

Learning Strategies
Each student will have the opportunity to "surf the net," looking for information on an individually chosen topic. Students are encouraged to use a variety of process skills (e.g., cooperative learning, collaborative learning, and integration of academics) in developing unit plans.

Assessment
A subjective evaluation was made to determine if students "integrated some facet of the Internet into their unit plan either through an activity or information gathered that could be used to meet one or more of the unit objectives."

Ways Students Will Learn How To Use Technology in Their Classrooms
Students integrated Internet "finds" into their unit plans, discussed how they might use the Internet to support their teaching in other ways, and involve their own students in using the Internet to support learning.

Module Implementation

Print Materials Needed
Very few printed materials will be used unless there are copies of journal articles the instructor would like to share with the students. Attached Supplementary Materials are made available electronically.

Equipment/Technology Needed
Computers connected to the Internet and the Netscape browser program

References
Armbruster, Lynda. (1994). *Internet essentials: A jump-start to getting on the Internet*. Indianapolis: Que Corporation.

Butler, Mark. (1994). *How to use the Internet*. Emeryville, CA: Ziff-Davis Press.

Crowe, Elizabeth Powell. (1994). *The electronic traveler: Exploring alternative online systems*. Blue Ridge Summit, PA: Windcrest/McGraw-Hill.

Eddings, Joshua. (1994). *How the Internet works*. Emeryville, CA: Ziff-Davis Press.

Ellsworth, Jill H. (1994). *Education on the Internet*. Indianapolis: Sams Publishing.

Levine, John R., & Baroudi, Carol. (1993). *The Internet for dummies*. San Mateo, CA: IDG Books Worldwide, Inc.

Kehoe, Brendan P. (1992). *Zen and the art of the Internet* (homepage source). Educational Computing Network.

Pike, Mary Ann, & Pike, Tod G. (1994). *The Internet quickstart*. Indianapolis: Que Corporation.

Web Sites
http://www.ECNet.Net/users/miac/doc/unix/ecom/web/netscape.htm

http://www.ECNet.Net/users/miac/doc/win/email/eudoraw.htm

http://www.ECNet.Net/users/mfdw/

http://www.ECNet.Net/users/mifidl/jobaids/internet.beginning.html

Supplementary Materials

Locating and Saving Information of Interest to You Using Netscape

Locating Information on the Internet

Searching for information on the Internet can be done in a variety of ways. Select one that suits your fancy!

To Search with a Keyword

- Select the **Net Search** button on the WIU Home Page to select a search engine. These engines search Web sites, which have movie, sound, photo, graphic images, and so on, as well as text and compressed files.

- OR From the WIU Home Page, click "Internet" in the Off-Campus menu.

  Enroll: Catalogs and Courses and Admissions and Financial Aid
  About WIU: Calendar of Events and Policies and Publications and on-line tours
  OFF-Campus: Internet & WIU-Regional Center & Extension courses & Macomb & Int'l studies
  Help! ECN Helpdesk & how to use the Web & computing documentation

  Follow this sequence of links: Gopher sites/ECN Gopher/Additional Information Servers/Directories/Other Gopher Servers/Search titles in Gopherspace with Veronica. Gopher sites contain text-only files or compressed files which cannot be viewed on the screen until they are decompressed on your machine.

- OR Follow the same sequence above as far as Directories, and then select Archie to search FTP sites for valuable files (FTP = compressed files that can be downloaded to your computer).

In all three cases, you will be presented with an opportunity to type in a keyword to search for Gopher, FTP, or Web sites on the Internet. The Web search engines are the most powerful tools for locating useful information on the Internet.

To Browse Menus and Links

- Follow the WIU Home Page/Internet/Web Home Pages path, exploring from there by clicking on hotlinks and setting bookmarks.

- OR Begin browsing with the What's Cool or What's New buttons at the top of the Netscape window.

- OR From the WIU Home Page, link to "Internet" in the Off-Campus menu. Follow this sequence of links: Gopher sites/ECN Gopher/Additional Information Servers/Directories/Other Gopher Servers; browse through countries briefly for scope and then select menu items as you wish, setting bookmarks when you find useful places.

  Netscape is designed precisely for this kind of browse/search strategy; however, it is easy to get lost or forget where the great finds you unearth are. Therefore, setting bookmarks is essential. (See the Bookmarks section on page 6 of these supplemental materials for instructions on how to set bookmarks.)

To Browse Using Yahoo or Other WWW Directories as a Guide

- Click the Net Directory button and open a link to Yahoo, a rich directory of categorized links (URL: http://www.yahoo.com) in Netscape.

- OR Scroll down the Net Directory window (past Yahoo) to other directories posted on the Internet.

- Again, set bookmarks when you discover interesting sites!

To Search for Software Titles

- There are many collections of public domain and shareware software on the Internet. Follow the Netscape path: WIU Home Page/Off-Campus: Internet/FTP Sites/Popular FTP Sites via Gopher/Sumex or Software Archives at MERIT. These are excellent collections to try; however, there are others that appear in this list as well.

- You cannot preview the software until it is downloaded to your hard drive because it is compressed. Instructions for how to download these files can be found in the "Saving Information You Want To Keep" section of this handout.

To Open a URL Location Directly

If you have a URL (electronic address for a site on the Internet) that you would like to log into, choose "Open Location . . ." in the File menu of Netscape and type it in exactly. If it is a Gopher address, you must preface the address with "gopher://"; if it is an FTP address, you must preface the address with "ftp://". All Web sites are prefaced with "http://".

Saving Information You Want To Keep

Text

To Save a Portion of a Text Document

- Open the document and drag to select the desired section of the document.

- Choose "Copy" in the Edit menu.

- Paste it into another program such as an open document in your word-processing program (choose "Paste" in the Edit menu).

To Save the Entire Text File

- Open the document and choose "Save As . . ." in the File menu.

- Select Text in the Format portion of the "Save As . . ." dialog box to save it as a text only file that can be opened in your word processing program.

- OR Select Source in the Format portion of the "Save As . . ." dialog box to save the file as an HTML document that you can read with Netscape.

Software

To download these titles, simply click on the name of the program. If you are using Netscape from the MAC.SYS server, the file will automatically decompress so that you can view it when it reaches your machine.

Graphics

- In Netscape, a visible screen image can be saved by positioning the pointer on the image and holding down the mouse button. A menu appears and "Save As . . ." can be selected.

- Many graphics are available on the Internet at FTP sites (compressed) and can be acquired using Fetch (an FTP program in the Interpret folder of MAC.SYS). You must know the electronic address of the server on which the graphic is located to use this program.

- Graphics can also be "captured" by taking a Mac picture of them. Use the key combination Command-Shift-3 to take a picture of the screen (or the Shareware program Flash-it to select a portion of the screen). Then use a graphics editing program to cut out the graphic section you want.

- Bookmarks: Bookmarks are specific to the machine that is being used, so if you will be using more than one machine, you will want to save your bookmark list as a file separate from Netscape.

- Choose View Bookmarks in the Bookmarks menu of Netscape.

- Click the Export button.

- Indicate where you want it exported (to a floppy?) and name the file (Netscape bookmarks?). If you anticipate doing this often, you may want to put a date in the title so that you know which list is your latest one.

Printing

If you would like to print a document that you see on the screen in Netscape, choose Print in the File menu.

Recommended Guide on the Internet

Fraase, Michael. (1995). *The Mac Internet Tour Guide: Cruising the Internet the Easy Way.* Chapel Hill, NC: Ventana Press. (ISBN: 1-56604-062-0)

This book comes with a disk of shareware and other programs which can be used for accessing the Internet (e.g., MacTCP). A more recent edition may be available. Many publishers are also putting out books specific to the use of Netscape, as well.

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Using Netscape

Your World Wide Web Guide to the Internet

Table of Contents

- What is Netscape?
- Accessing Netscape and *WIUnet*
- Overview of Netscape Commands: Using the menu bar and button bar
- Faster Access to other Web Sites: WWW Addresses and FAQs and Bookmarks
- Printing and Saving Web Files
- Sending E-Mail with Netscape
- Leaving Netscape

Related Documents

- Using Other Internet Services through Netscape:
    - Getting Free Software with FTP
    - Tunneling through Gopherspace
    - Running Internet Programs with Telnet and Netscape
    - Using UseNet Newsgroups
    - Searching the Internet using Netscape with Veronica, Archie and WAIS
- Lynx on UNIX, your Text-only Web browser
- Accessing WIUnet, the Campus-Wide Information System at WIU

What is Netscape?

Netscape is a popular Web browser that normally resides on your hard drive and can display text, pictures, sound and video in a highly formatted form on the screen. It was developed by most of the original NCSA Mosaic team led by Mark Andressen, now working for Netscape Communications.

Not only can this graphical software handle the hypertext links of the World Wide Web, but also provides a simple way to view newsgroups, do keyword searches of specific Web sites, look at text-based gopher information, use file transfer to download software from FTP sites, and even send a truncated form of e-mail. You can also find instructions for using other Internet program and protocol services, search the "white pages" for electronic addresses of colleagues in other university systems, telnet to other Internet remote login sites for local information, search for programs using Archie servers, and access "name servers" such as *WAIS*, *whois* and *InterNIC*.

For more detailed information on *Netscape*, consult the book entitled *Using Netscape: The User-Friendly Reference* by Warren Ernst (Copyright 1995 by Que Corporation, ISBN: 0-7897-0211-8). Copies are available for reference in each WIU computing lab and are sold in the University Union Bookstore.

Overview of Netscape Commands

Menu Bar

Here is a list of the most common commands you will use from the **Menu Bar** in *Netscape*, and the actions each perform.

Bookmarks / -- Create a custom menu of favorite sites
    Add Bookmark -- Mark a site so you can visit it later
    View Bookmark -- Go directly to, or edit, a favorite Web site

File / -- Find and handle individual Web pages
    Open Location -- Retrieve and display a Web page from a Web server after typing the URL address
    Open File -- Load a saved Web page from a local disk (not a Web server)
    Print -- Print the current page to your local printer
    Save As -- Save the current page to disk or other specified directory
    Mail Document -- Create e-mail
    Exit (Windows) or Quit (Mac) -- Exit Netscape

View / -- Work with hidden codes
    Source -- View the HTML codes for the current page
    Reload -- Fixes a Web page that either did not load properly or has had changes made to it

Go / -- Duplicates the Toolbar (icons)
    View History -- View the list of sites you've visited during this session

Directory / -- Duplicates the Directory buttons
    Go to Newsgroups -- Join a newsgroup or review newsgroup articles

Options / -- Controls the aids you see on-screen
    Show Directory Buttons -- Turn the Netscape corporation directory buttons off/on
    Preferences -- Configure *Netscape*
    Auto Load Images -- Turn graphic images off/on when loading new pages
    Show Toolbar -- Turn the toolbar (icons) off/on
    Show Security Colorbar -- Turn security colorbars off/on (Windows only)

Button Bar (Toolbar of Icons)

Use the following "hot buttons" to perform actions and move between documents quickly.

Button Bar (Toolbar of Icons)

Use the following "hot buttons" to perform actions and move between documents quickly.

Back	Allows you to view the previous page
Forward	Displays the next Web page (the one you left when you clicked on Back)
Home	Returns you to your home page
Reload	Fixes a Web page that either did not load properly or has had changes made to it
Images	Displays images in the current document (if they did not automatically load)
Open	Retrieves a new Web page and displays it after you manually type in the address
Find	Searches for a word or phrase within the current Web page
Stop	Halts the transfer (loading) of the chosen Web page (for instance if you change your mind about wanting to view it)

On a Macintosh, you also have a **Print** button, which takes you to the print menu so you can print to your local printer.

Faster Access to other Web Sites

Netscape allows you to jump from one document to another in several ways. You can either use any one of the available search engines, or use the hot buttons and "URLs" to access the information you want.

World Wide Web Addresses -- URLs

The electronic address of a specific World Wide Web page is called a Uniform Resource Locator, or URL. The URL is located at the top of your *Netscape* screen in the location box. In the long, white area you will see something that looks like this:

http://www.ecn.bgu.edu/users/miuniv/wiu/index.html.

This is the URL. It has four parts:

- **http://** says you want to use the World Wide Web language called **H**yper**T**ext **T**ransfer **P**rotocol, rather than "**ftp://**" for file transfer or "**gopher://**" for gopher sites or "**telnet://**" for remote login or "**news://**" for newgroup access or "**mailto:**" to send an email message through a Web browser
- **www.ecn.bgu.edu** refers to the location or host name of the computer that stores this Web page (ECOM or UXB at ECN)
- **/users/miuniv/wiu/** names the individual account and directory that holds this web page
- **index.html** is the filename of the Web page loaded onscreen

WIU also has a "nickname" (or alias) URL that you can type:

http://www.wiu.edu/

This shorter URL takes you to the same location, but the longer "absolute" address appears in the location box on the screen. The shorter URL is what should appear in in the "Home Page Location" box under Options/ Preferences /Windows (and styles).

Frequently Asked Questions

If you know the URLs -- http addresses -- of pages at specific Web sites, you can access other servers around the world by typing the proper URL. For example, you can find answers to several frequently asked questions (FAQs) on the Internet by typing the following URL in the location box (accurate as of July 1995):

http://www.cis.ohio-state.edu:80/hypertext/faq/usenet/FAQ-List.html

To find answers to frequently asked questions about creating your own Web documents at Western Illinois University, you can use the URL --

http://www.ecn.bgu.edu/users/miac/wiu/doc/unix/ecom/web/webfaq/faq.htm

Personalizing the Menu with Bookmarks

Once you find something that interests you in the menu hierarchy, you can add that document to your bookmarks list so that it can be easily found again. Once connected to the proper page via *Netscape*, you will see a Menu bar (words) at the top of the screen, along with a button bar of items to select.

- To add a page as a bookmark, all you need to do is pull down the Bookmark menu and select **[Add Bookmark]**.
- From now on, just pull down the same menu and select **[View Bookmark]** to call up your personalized list, so you can go directly to your favorite Web site.
- You may need to update a bookmark occasionally. Press **[View Bookmark]**, click on the necessary item one time, click on **[Edit]** and then either edit the bookmark's URL and click on **[Done Editing]** or **[Remove Item]** to delete it completely.

Printing and Saving Web Files

Printing Web Documents

You can print most documents you can view on-screen by pulling down the File menu and selecting Print.

If you are working on a Macintosh, you can either choose **File, Print. . .** or click on the **[Print]** hot button; they both do the same thing.

You can save files to your hard disk by selecting **File** on the menu bar and then either **Save** or "**Save As**. . ." It is better that you use the "Save As. . ." command at first so that you can be sure the information is saved correctly.

The system, as a default, will save the file with the name in the title bar and add the extension *.htm* (for Windows users) or *.html* (for Macintosh and UNIX users). With the "Save As. . ." command, you can change the default name of the file to something that will be easier for you to remember.

Once the file has been saved, it can be reloaded by choosing the **File Open** command or clicking on the **[Reload]** hot button.

Sending E-Mail with Netscape

There are two simple ways to send electronic mail in *Netscape*:

1. Some documents have links set up which automatically send a response via email to the site administrator when you click on them.
2. By using the **File** -- **Mail** Document command on the menu bar, you can actually compose a message to send to yourself, someone else, or even a group of people which will attach a copy of the Web page you are viewing.

Some example forms of addresses are:

```
mujad@uxa.ecn.bgu.edu                      (to Pine or Elm)
JA-Doe@bgu.edu                             (to Pine or Elm)
Firstname_Lastname@ccmail.wiu.edu          (to cc:Mail)
```

To send e-mail from Netscape, follow these steps:

1. Enter the e-mail address of the person you wish to receive the message. If you would like the message to go to several people at once, separate each address with a comma. *Be sure to include the entire address.* For example:

   wernst@crl.com, Jane_Ann_Doe@ccmail.wiu.edu, mujrb3@uxa.ecn.bgu.edu

2. Type the subject of the message. If you do not change the subject, Netscape automatically uses the URL of the attached document as the subject of the message.
3. In the blank white area below the subject is where you can actually type your message. *Netscape* does not automatically wrap the sentences around at the end of the line, so you will need to use your **[Return]/[Enter]** key.
4. To include the Web document you are currently viewing, click on the **[Include Document Text]** button at the bottom left of your screen.
5. When you finish the message, click on the **[Send Mail]** button, at the bottom left of your screen. If you decide not to send the message after all, click on the **[Cancel]** button in the bottom right of the screen.

Leaving Netscape

After some practice with specific Web browsers like *Netscape*, you will be prepared to use more advanced features of Internet resources such as TIN and TRN, Telnet, FTP, Archie, and X.500 Gateways to explore additional host computer sites.

- To exit **Netscape** on a PC and return to the Windows Program Manager, pull down the File menu **(Alt-F)**> and select **Exit**. You can now use any other Windows resource, or choose **File**, **Exit Windows. . .** to return to the Main LAN Menu.
- To exit **Netscape** on a Macintosh, pull down the **File** menu and select **Quit**.

Have fun exploring with Netscape!

TOP ECN wiu

NEXT to Using Other Internet Services through Netscape

An Academic Computing document . . . . . AC Helpdesk = 298-2704
URL: "/users/miac/wiu/doc/unix/ecom/web/netscape.htm" [revised 1/24/96 ELS/mrd]

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Eudora Email for Windows

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Related Documents:

cc:Mail for DOS or Macs on the campus LAN
Pine or Elm or Eudora for Macs on ECOM
Internet Email Addresses and (N)Etiquette

Getting Started with Eudora

Open Eudora

1. Double-click on the **Eudora: Electronic Mail** icon in the **Program Manager** (often in the **Internet** group).
2. When prompted for a password, enter it (usually the same as your ECOM account password).
   Note: Eudora automatically moves all your mail from your ECOM account into Windows. Only new mail (mail received after you exit Eudora) will be viewable in ECOM.
3. If your incoming mail doesn't already appear on the screen, pull down the **File** menu and select **Check Mail**, or press **[Ctrl]-[m]** to open the incoming mailbox.

Send a Message

1. Pull down **Message** and choose **New Message** or press **[Ctrl]-[n]**
2. Type the recipient's email address in the **To:** field
3. Tab to subsequent fields and type the desired information
4. Type the message text
5. If desired, set the Priority level by clicking on the down arrow next to the **Normal** button on the top left of the option bar. Click on any of five priority levels displayed (Highest, High, Normal, Low, or Lowest).
6. Click on **Send**

Send (Attach) a File

1. Create a new message, as above, that describes the file you are sending, but don't send it yet.
2. Pull down the **Message** menu and select **Attach Document** or press **[Ctrl]-[h]**
3. Select a filename from the dialog box
4. Click on **OK** or press **[Enter]**
5. To send additional files, select them using **Message, Attach Document** again
6. When the message and all attachments are ready, click on **Send**

Read your Mail

- To open a message, use the up or down arrow to highlight the message you want to read and press **[Enter]**, or use your mouse to double-click on the message you want to read.

- You can close a message three different ways:
  - Pull down the **File** menu and choose **Close**
  - double-click the close box in the top left corner of the mail message window
  - click on the "Minimize" (down arrow) hot button in the top right of the message window. (If you use "Minimize", Eudora will place an icon for that message at the bottom of the screen.)

Acting On Messages You've Read

Delete a Message

There are several ways to delete a message in *Eudora*. First highlight the line containing the message you want to delete. Then:

1. Pull down **Message** and select **Delete** or press **[Ctrl]-[d]**
2. Pull down **Transfer** and select **Trash**
3. Click on the **Trash** hot button (red arrow pointing to trash can)

Handling the trash:

- To view the list of messages in your trash, pull down the **Mailbox** menu and select **Trash**.
- You can discard Trash one of two ways:
  - pull down the **Special** menu and select **Empty Trash**
  - **Quit** Eudora by pulling down **File** and choosing **Quit** or pressing **[Cmd]-[q]**

Reply to a Message

1. Read the message or select it in the **In** mailbox
2. Pull down **Message** and **Choose Reply** or press **[Cmd]-[r]**
3. Place the cursor where you want to begin your reply
4. Type your response
5. Click on **Send**

Forward a Message

1. Read the message or select it in the **In** mailbox
2. Pull down **Message** and choose **Forward**
3. Type the recipient's email address in the **To:** field
4. Tab to subsequent fields and type the desired information
5. Type the message
6. Click on **Send**

Print a Message

1. Make sure the printer is turned on and you are connected with the **Print Manager**
2. Read the message or select it in the **In** mailbox
3. Pull down **File** and choose **Print**
4. Correct any items that appear in the dialog box
5. Click on **Print**

Receive Attachments

Attachments will be saved to the default directory set up specifically for receiving attached files. To see where they are being saved and change the directory/path:

1. Pull down the **Special** menu
2. Select **Configuration. . .**

At the bottom of the dialog box, you will see a checkbox that says *Auto Receive Attachment Directory* and a hot button that lists the current path where attachments are being saved, such as **C:\INTERAC\EUDORA\MAIL**. To change the autosave directory:

1. Press the current path hot button.
2. In the **Select Auto Receive Directory** dialog box, double-click on the appropriate directories.
3. Once you have made your selection(s), press the **Use Directory** hot button in the top left hand corner of the dialog box.

To change the options so attachments will NOT be automatically saved, click on the checkbox beside **Auto Receive Attachment Directory** to remove the check.

If you are using *Eudora* when a new message is being received, a dialog box will ask if you want to save the attachment and where you want to save it. **If you choose NOT to save it, the attachment will be included in the document text, and you must save and convert it yourself later on.**

Using Mailboxes

To switch to a different mailbox, pull down the **Mailbox** menu and double-click on another mailbox.

Create a Mailbox

1. Either pull down **Special** and choose **Mailboxes** OR pull down the **Mailbox** menu
2. Click on **New**
3. Type the name of the new mailbox in the field box
4. Click on **OK**

Change Mailboxes

1. Choose **Mailbox**
2. Choose the name of the mailbox you want

Transfer a Message

1. Highlight the line with the message you want to transfer
2. Choose **Transfer**, then the name of the mailbox in which you want to place the message

Delete a Mailbox

1. Pull down **Special** and choose **Mailboxes**
2. Highlight the mailbox you want to delete
3. Click on **Remove**
4. Click on **Remove It**
5. Click on the close box to close the window

Finishing Up

Exit Eudora

1. Pull down **File** and choose **Quit** or press **[Cmd]-[q]**

TOP ECN wiu

An Academic Computing document . . . . . AC Helpdesk = 298-2704
URL: "/users/miac/doc/win/email/eudoraw.htm" [11/9/95 mrd/ELS]

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**Return to
Information Management and Decision Sciences
College of Business and Technology
Western Illinois University**

January, 1996

WESTERN ILLINOIS UNIVERSITY
COLLEGE OF EDUCATION AND HUMAN SERVICES

Netscape
1.1N

Getting Started on the Internet

The Basics

What is the Internet?
A massive network of over 10,000 smaller computer networks at the regional, state, federal, and international levels, run by college campuses, businesses, the military, government agencies, commercial services (such as America Online, Compuserve, Prodigy, and so on). Millions of users from the United States and dozens of foreign countries use the Internet. Growth rates are often quoted at 10-15% per month, with over 20 million current users.

History?
Originally started in 1969 as a network linking universities and industry to the national government for military purposes, it has grown and expanded and changed dramatically since the mid-1980s when user-friendly software was written for the rest of us to navigate an expanding Internet more easily. Further changes are anticipated to enlarge its commercial role in the future. Decisions about technical standards, and so on, are generally made by a group of volunteers called The Internet Society. No single management organization runs the Internet.

What's on it?
Computers with special collections such as library catalogs, databases, discussion group archives, shareware and public domain software collections, video/audio/photo collections, lesson plans, government archives, forms, and so on. Most sites allow free access and free downloading privileges, but some are free-based services. The Internet is also used for a variety of communication purposes.

What software is used to explore it?
Netscape, Mosaic, and TurboGopher, are some of the more popular software applications used to browse the Internet with a Mac. All three are public domain titles available to you on WIU's MAC.SYS server.

1. Netscape and Mosaic are available for Macs, PCs, and Unix systems. They browse the Internet using a hypertext interface (called the World Wide Web), that is, one which accesses information that is organized in a web-like series of associations, not a linear list or menu. These links may access sound, graphic, photographic, movie, as well as text files.

2. TurboGopher is the Mac version of Gopher which runs on PCs and Unix systems (ecom). It browses the Internet using text only, menu-driven interface.

Other software that you may use for specialized Internet activities include

1. Fetch, a program which can be used to download files directly from other computers on the Internet when you know the file's electronic address.

2. StuffitExpander and several other programs that can decompress any compressed files you download.

They are all in the Internet folder of the MAC.SYS server.

What are the system requirements for the Internet browsers?
Netscape and Mosaic require System 7, and at least 4 MB of RAM. However, 8 MB of RAM is suggested. In addition, MacTCP 2.04 or later must be in the System Folder. MacTCP is available on the WIU MAC.SYS server to copy to your hard drive. If you anticipate viewing movies and complex images with Netscape, you will need plenty of hard drive space as well because these images are actually loaded temporarily onto your hard drive when they are displayed. Some movies are several megabytes in size, for example. TurboGopher (or Gopher on ecom) will run easily on most Macs connected to a network (directly or via modem). Using Netscape from home requires as fast a modem as you can afford (at least 14,400 bps recommended.)

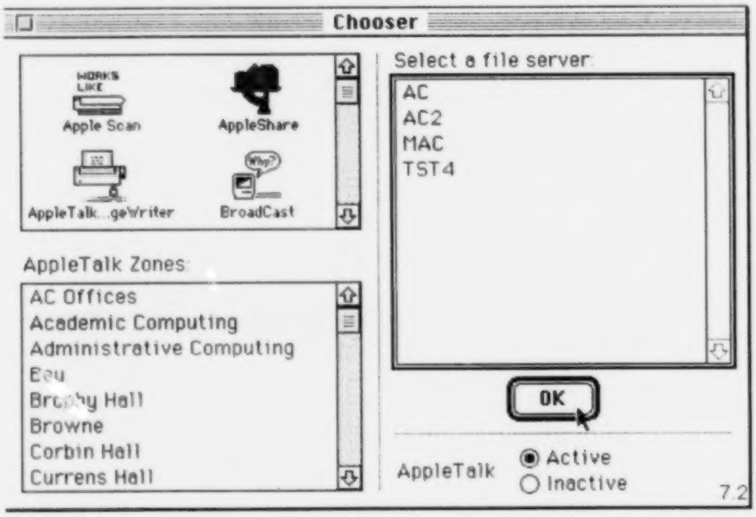
Locating Internet Browsing Software on WIU's LAN

(LAN is the acronym for **L**ocal **A**rea **N**etwork)

Do you have the MAC.SYS server icon on your desktop (or in the Apple menu)?
If you have the MAC.SYS server, go on to the next step. If you do not,

1. Select the Chooser in your Apple menu.

2. In the Chooser dialog box, select "Appleshare" in the upper left window, "Academic Computing" in the Apple Talk Zones window, and "MAC" in the Select a File Server window. Click "OK."

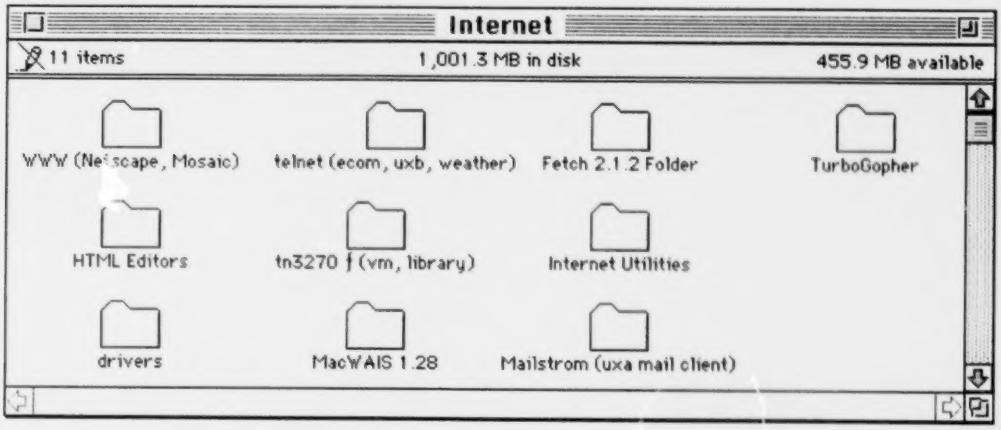

Chooser
Apple Scan
AppleShare
AppleTalk...geWriter
BroadCast
Select a file server:
AC
AC2
MAC
TST4
AppleTalk Zones:
AC Offices
Academic Computing
Administrative Computing
Beu
Brophy Hall
Browne
Corbin Hall
Currens Hall
OK
AppleTalk
● Active
○ Inactive
7.2

3. Login as "guest" (OK) and click MAC.SYS (OK).

4. Select the MAC.SYS icon that appears on your desktop now and choose "Make an Alias" from the File menu. This alias will appear each time you turn on your computer. Double clicking on the MAC.SYS Alias icon will allow you to get to any of the software available to you on the LAN without having to go to the Chooser and repeating this process each time.

Where is the software on the MAC.SYS server?

1. Double-click the MAC.SYS icon and the following path of folders: Mac Programs/Communications/Internet. The window below opens.


Internet
11 items
1,001.3 MB in disk
455.9 MB available
WWW (Netscape, Mosaic)
telnet (ecom, uxb, weather)
Fetch 2.1.2 Folder
TurboGopher
HTML Editors
tn3270 ƒ (vm, library)
Internet Utilities
drivers
MacWAIS 1.28
Mailstrom (uxa mail client)

2. When the Internet folder is open, choose "Make An Alias" in the File menu so that you can quickly access any of these programs without having to repeat this path each time you wish to use the Internet.

3. If you would prefer not having the extra alias icons on your desktop, you may drag them into your Apple Menu Items folder in your System folder. Then you can select them at any time by using the Apple pull-down menu.

4. Double-click "WWW (Netscape, Mosaic)" in the Internet window.

5. Double-click "Netscape 1.1N" or the most recent version of Netscape that appears.

Additional Information

Additional "Getting Started on the Internet" documentation is available from the Faculty ID Lab's Web page at http://www.wiu.edu/users/mifidl/jobaids/internet.html

- Locating E-mail Addresses
- Electronic Discussion Groups
- The Netscape Interface
- Locating and Saving Information from the Internet

Using Video To Enhance Understanding of Human Growth and Development

Sandra Nelson & Dr. Tom Cody

Ameritech

wiu Western Illinois University

Tools for Teaching with Technology

The WIU Approach
to Integrating Technology
into Teacher Education

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Using Video To Enhance Understanding of Human Growth and Development

Sandra Nelson and Dr. Tom Cody
Department of Educational Foundations

Module Context

Course Description

EDFD 201 - Human Growth and Development. Explores lifespan growth and development of the individual from conception through adulthood. Particular attention is given to development in different school settings.

Course Prerequisites

None

Additional Courses Where Module Could Potentially Fit

Any teacher education course in which classroom observation leads to application of human development and learning principles, or classroom practices

Other Relevant Student Characteristics

Students enrolled in EDFD 201 (approximately 200 per semester) are completing the first course in the preservice professional education sequence—a required course for elementary, secondary, and comprehensive majors.

Module Focus

Title of the Module

Using Video To Enhance Understanding of Human Growth and Development

Content Area of the Module

A series of edited videos demonstrates human growth and development concepts at grade levels K, 1, 3, 6, and high school. The series demonstrates principles from Erickson, Piaget, Kohlberg, Vgotsky, and social learning theory as well as others. A sample of various lessons can be reviewed on the enclosed videotape in this "Tools for Teaching with Technology" package.

Description of the Module

Each video vignette reveals students in classrooms demonstrating stages of social/emotional and cognitive development. Videos are used to promote classroom interaction and individual student review using observation forms. Some of the vignettes can also be augmented with interactive television between preservice students and the teachers/students in the videotaped classrooms. Finally, students share their observations with the instructor via e-mail.

Ameritech Student Outcome(s) Supported

- To evaluate and use communications technologies along with computers and multimedia to support the instructional process.

- To use communications technologies to enhance personal and professional productivity.

Specific Module Objectives

- To identify and interpret specific aspects of human development.

- To develop skills in recognizing and understanding cognitive and social/emotional dimensions of behavior in the public school classroom.

Technology Competencies Developed Through the Module

Awareness

Students will see, modeled by the instructor, effective integration of video and electronic presentations into a lesson. The instructor uses the vignettes to stimulate class discussion of course concepts. Discussion is encouraged in small groups and via e-mail between the instructor and individual students.

Hands-On Experience

Students participate as active learners in live, interactive television links between themselves and teachers/students in K-12 classrooms shown earlier in the vignettes.

Skills Development

Students acquire e-mail accounts and regularly use an e-mail program to communicate their ideas with one another and the instructor.

Module Contents

Teaching Strategies

The instructor will model use of the video segments in many lessons. Developmental content will be covered in class and at the beginning of the module. The instructor also serves as the moderator for the ITV sessions.

Learning Strategies

Students will be observing video vignettes, interacting as a class in small groups, and completing observation forms. The video segments contain examples of small group instruction/interaction, centers, cooperative learning, questioning techniques, role playing, small group creative writing, debate, and/or classroom discussion. Students will also reflect on their observations via e-mail and have opportunities to ask questions of the teachers/students in some of the vignettes via interactive television. Copies of the vignettes for individual student use are available at the university library audiovisual center to review and analyze using observation forms (see Supplementary Materials).

Ways Students Will Demonstrate Competency/ Assessment

Student reports of video assignments are submitted via e-mail. Feedback from instructors is also communicated by e-mail.

Ways Students Will Learn How To Use Technology in Their Classrooms

Discussion about the human growth and development concepts illustrated in the videos frequently expands to effective classroom practice. Students see effective integration of videos and multimedia presentations modeled by the instructor.

Module Implementation

Print Materials Needed

- Documentation for e-mail
- Classroom observation forms

Equipment/Technology Needed

- VCR
- TV
- Interactive television system to link with public schools
- E-mail access

Other Resources Needed

- Interactive TV personnel
- Library audiovisual area for videotape review

Implementation Recommendations

- In some cases, students may need assistance in acquiring e-mail accounts and they may need computer lab assistance as they practice using e-mail.

- Students often have questions about the multimedia presentations. It helps to point out to students how video and electronic presentations can be used to enhance learning for a variety of learning styles.

- Significant advance planning is necessary for the ITV discussions.

Supplementary Materials

Video Summary Report

Student's Name ____

Title of Video ____

Main Points:

Why do you think this video was selected for this class?

Courtesy of Mrs. Lynette Spencer

Name ____________________

Observations 3 and 7
Social Characteristics
EDFD 201

Identify: Video ____________________

Line Observation ____________________

I. Setting

Date ____________________ Day of the Week ____________________

Time of Day ________ to ________ School ____________________

Location ____________________ Grade/Activity ____________________

Teacher's Name ____________________ Number of Pupils ____________

Others in Room ____________ (include yourself) Who? ____________________

Subject/Activity Observed ____________________

Briefly Describe Activity ____________________

____

____

Describe the appearance of the room (windows, size, equipment, interest areas, and so on)

____

____

II. What Stood Out: Choose two (2) ideas regarding the children that made an impression on you. Explain thoroughly. State why you believe these ideas are of importance in the lives of these students.

A. ____________________

____

____

B. ____________________

____

____

Courtesy of Mrs. Lynette Spencer

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III. Social Characteristics – Focus your attention on the social interactions and maturity of the students in relation to their peers and teacher(s).

A. Describe the nature of the social interactions of the students. With whom do the students relate during formal instruction? Unstructured times?

1. formal instruction: ______________________________

2. unstructured times: ______________________________

B. How long were students able to persist at interactions? Describe the situation and individual differences. Estimate the length of time.

____

____

C. Describe the behavior of the student leaders, followers, and loners. Compare and contrast their behaviors.

1. leader(s): ______________________________

2. follower(s): ______________________________

3. loner(s): ______________________________

4. similarities between the three: ______________________________

5. differences between the three: ______________________________

D. Relate one example each of the social interactions and responses between same sex and opposite sex children.

1. same sex: ______________________________

____

____

2. opposite sex: ______________________________

____

____

E. Cite examples of cooperative, competitive, and aggressive interactions observed.

____

____

Courtesy of Mrs. Lynette Spencer

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Name ______________________________

Observations 4 and 8
Emotional Characteristics
EDFD 201

Identify: Video ______________________________

Line Observation ______________________________

I. Setting

Date ____________________ Day of the Week ____________________

Time of Day __________ to __________ School ____________________

Location ____________________ Grade/Activity ____________

Teacher's Name ____________________ Number of Pupils __________

Others in Room __________ Who? ____________________
(include yourself)

Subject/Activity Observed ______________________________

Briefly Describe Activity ______________________________

____

____

Describe the appearance of the room (windows, size, equipment, interest areas, and so on)

____

____

II. What Stood Out: Choose two (2) ideas regarding the children that made an impression on you. Explain thoroughly. State why you believe these ideas are of importance in the lives of these students.

A. ______________________________

____

____

B. ______________________________

____

____

Courtesy of Mrs. Lynette Spencer

III. Emotional Characteristics – Focus your attention on the emotional level of the students in relation to their peers and to their teacher(s).

A. Note a list of positive behaviors observed and emotion(s) expressed.

Positive Behavior Emotion

1. ____

2. ____

3. ____

Comment ____

B. Note a list of negative behaviors observed and the emotion(s) expressed.

Negative Behavior Emotion

1. ____

2. ____________________ ____________________

3. ____

Comment ____

C. How freely and openly were emotions expressed? Use examples to support your statement(s).

____

____

____

D. How alert are the students to the emotions of others (empathy)? The teacher? Cite an example or two and explain.

____

____

____

E. What statements can you make about the maturity level of the group?

____

____

____

Courtesy of Mrs. Lynette Spencer

Name ______________________________

Observations 5 and 9
Mental/Cognitive Characteristics
EDFD 201

Identify: Video ______________________________

Line Observation ______________________________

I. Setting

Date ____________________ Day of the Week ____________________

Time of Day __________ to __________ School ____________________

Location ____________________ Grade/Activity ____________________

Teacher's Name ____________________ Number of Pupils __________

Others in Room __________ Who? ____________________
(include yourself)

Subject/Activity Observed ______________________________

Briefly Describe Activity ______________________________

____

____

Describe the appearance of the room (windows, size, equipment, interest areas, and so on)

____

____

II. What Stood Out: Choose two (2) ideas regarding the children that made an impression on you. Explain thoroughly. State why you believe these ideas are of importance in the lives of these students.

A. ______________________________

____

____

B. ______________________________

____

____

Courtesy of Mrs. Lynette Spencer

III. Cognitive/Mental Characteristics – Focus your attention on the cognitive activities of the students in relation to their peers.

A. Write down three (3) sample sentences of the students' speech. Comment briefly on each sentence.

1. ______________________________

____

2. ______________________________

____

3. ______________________________

____

B. To what extent did the students seem to be learning the material that was being presented? Explain.

____

____

C. Human growth and development texts discuss various theories of child development and learning. These theories can provide you with various ways of thinking about the child behaviors which you are observing.

Manifestations of principles from some theories are more difficult than others to locate in behavior occurring in natural settings. The theories of Piaget and Bruner, for example, concern themselves with the elusive notice of "intellectual structure" and with equally slippery concepts like "schema" and "image." Examples of these concepts are not immediately available for quick and easy observation.

Principles from the theories of classical conditioning, operant conditioning, and imitation lend themselves more readily to the sorts of observational study which you experience in classrooms. These theories are based on the assumptions that key components of the learning process are apparent and observable.

Your observational activities for this assignment will focus on the latter group of theories.

1. Select one child for observation. (It might be interesting to let the teacher recommend someone she feels is a discipline problem or a nonthriver in her class.) Observe the child for a 10-15 minute segment. As you observe, record each time the child is reinforced. You will have to use your judgment in determining when reinforcement occurs. Look especially for times that a teacher smiles, nods, frowns, speaks to, or glances toward the child. Children often reinforce other children by looking at them attentively, laughing with them, even occasionally praising them, or they may reinforce them negatively.

Courtesy of Mrs. Lynette Spencer

Use the following form to record your observation.

Name of Student ______ Johnny ______

Time	Type of Reinforcement	Behavior Reinforced	Source of Reinforcement
10:01	"Good, Johnny"	Giving correct answer	+ Teacher
10:04	Giggle	Drops pencil	– Female classmate
10:08	Teacher checks work	Correct answers	+ Teacher—gave a sticker

+ positive reinforcement
– negative reinforcement

2. Summarize your observations of reinforcing behavior. Incorporate at least one (1) term. Highlight or underline. Include some or all of the following:

   a. Were all pupils reinforced equally? Positively? Negatively?

   b. Comment on the sources and types of reinforcement employed.

   c. What behaviors were reinforced most (e.g., compliance, rule-following, expressiveness, disruptions)?

   d. Your comments:

____

____

____

____

____

____

____

Courtesy of Mrs. Lynette Spencer

Format for Writing the Observation Papers
EDFD 201

	Group Observation Reports		Individual Observation Reports
1.	I, II, III Personality Profile	1.	I, II, III Appearance
2.	I, II, III Personality Types: Discussion Group	2.	I, II, III Behavior
3.	I, II, III Similarities & Differences	3.	I, II, III Erikson
4.	I, II, III Physical Characteristics	4.	I, II, III Piaget
5.	I, II, III To Be Assigned	5.	I, II, III Chess
6.	I, II, III Social Characteristics	6.	I, II, III 3 Terms
7.	I, II, III To Be Assigned	7.	I, II, III Baumrind
8.	I, II, III Emotional Characteristics	8.	I, II, III Kohlberg
9.	I, II, III To Be Assigned	9.	I, II, III 3 Terms
10.	I, II, III Mental Characteristics	10.	I, II, III Marcia
11.	I, II, III To Be Assigned	11.	I, II, III Kübler-Ross
12.	I, II, III Any Two: P, S, E, or M	12.	I, II, III To Be Assigned

I. Setting: Include date, time of day, duration of observation, day of week, location, person in charge, age and/or grade level, approximated number of people observed, subjects and/or activities, organization of activities, observers, others in room, and any other relevant information. Identify video or line observation.

II. What Stood Out: Identify two ideas (A and B) regarding the individuals or group observed. For each, (1) write a topic sentence, (2) objectively describe what you saw relating to the idea of your topic sentence, and (3) subjectively elaborate your thoughts about it—how might your idea be important in the lives of people similar to those observed, now or later?

III. GORs: Physical, Social, Emotional, or Mental: This is the same as in II, above—two ideas: each with topic sentence, objective information, and subjective information, except for III, carefully related to the category of the characteristic assigned. IORs: In III, elaborate two specific ideas and terminology related to Human Growth and Development and to the observation. Highlight terms.

You need to make a total of twenty observations to receive credit for EDFD 201.

You may not make more than one Independent Observation a day nor more than four in one week, unless an exception is sought, granted, and put in writing.

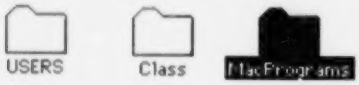
Courtesy of Dr. DuWayne Furman

Accessing "Pine" Electronic Mail on WIU's Network

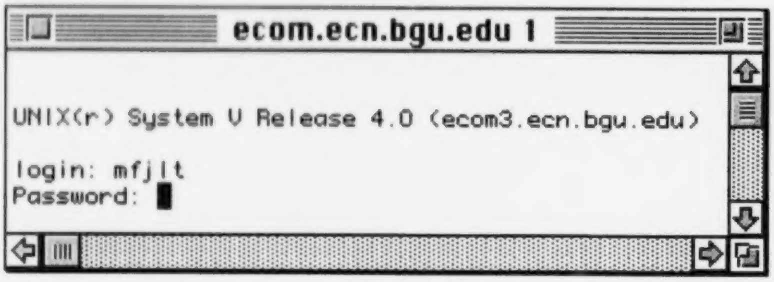
In order to use "Pine" to send electronic mail, you must acquire an account from Academic Computing. You may do this from any computer lab on campus. Ask the Computer Lab Assistant for assistance.

Logging in to Ecom with a Macintosh

1. Locate the Mac HD icon on a Macintosh computer in any lab on campus. Double-click this icon to open it. Macintosh HD
2. Locate the Login folder Login in the Mac HD window. Double-click the Login folder to open it.
3. Double-click the Login/Guest icon that appears in the next window.
4. Double-click the MacPrograms folder as shown below.

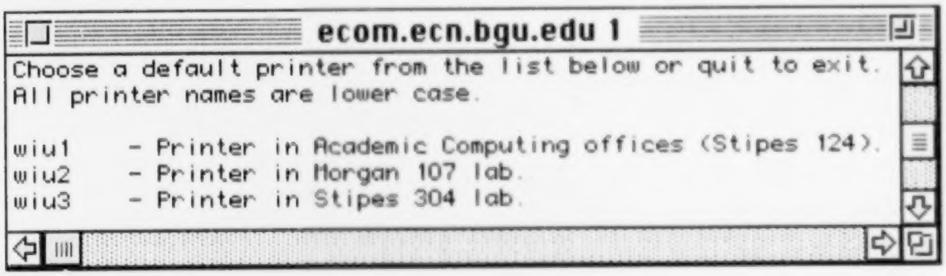


5. Continue double-clicking folders in the following order:
   - Communications
   - Internet
   - Telnet (ecom, uxb, weather)
6. In the Telnet window, double-click the ecom icon. ecom (Formerly UXA)
   a. You will be prompted to login as shown below.
   b. Type in your "muxxx" login account name (press Return) and your password (press Return)



```
UNIX(r) System V Release 4.0 (ecom3.ecn.bgu.edu)

login: mfjlt
Password: █
```

c. When you are asked to choose a printer, type the printer you want or press Return if you do not plan to print.

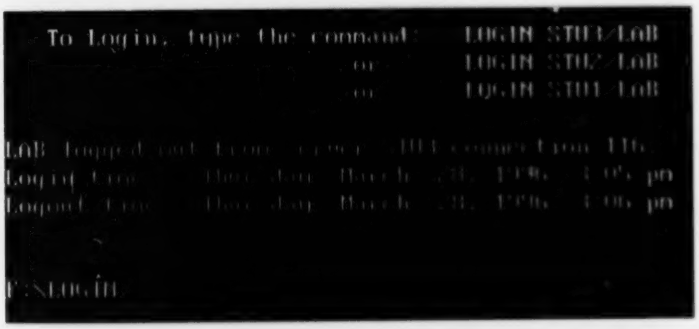

ecom.ecn.bgu.edu 1

```
Choose a default printer from the list below or quit to exit.
All printer names are lower case.

wiu1    - Printer in Academic Computing offices (Stipes 124).
wiu2    - Printer in Morgan 107 lab.
wiu3    - Printer in Stipes 304 lab.
```

Logging in to Ecom with a PC

1. Go to a PC in any lab on campus.

2. You will be presented with a screen that looks like this:

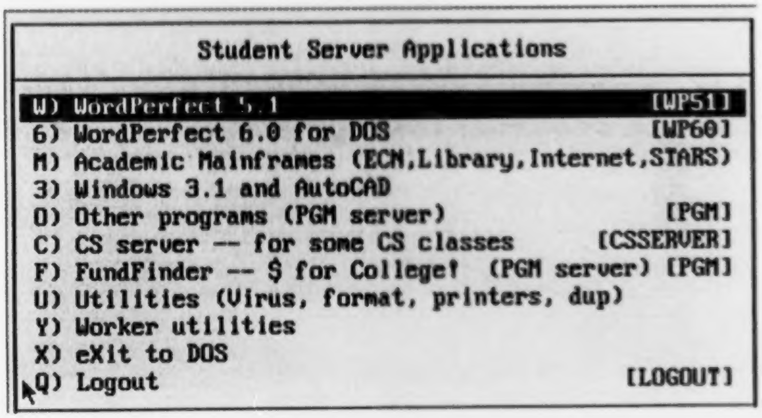


```
 To login, type the command:     LOGIN STU3/LAB
                        or       LOGIN STU2/LAB
                        or       LOGIN STU1/LAB

LAB logged out from server STU3 connection 116.
Login time:    Thursday  March 28, 1996   1:05 pm
Logout time:   Thursday  March 28, 1996   1:06 pm


F:\LOGIN>
```

   Type in one of the login commands listed above and press Enter.

3. As prompted, type in your social security number and name.

4. The PC server menu appears, as shown below:


Student Server Applications
W) WordPerfect 5.1 [WP51]
6) WordPerfect 6.0 for DOS [WP60]
M) Academic Mainframes (ECN,Library,Internet,STARS)
3) Windows 3.1 and AutoCAD
O) Other programs (PGM server) [PGM]
C) CS server -- for some CS classes [CSSERVER]
F) FundFinder -- $ for College! (PGM server) [PGM]
U) Utilities (Virus, format, printers, dup)
Y) Worker utilities
X) eXit to DOS
Q) Logout [LOGOUT]

5. Use the arrow keys to go down to "Academic Mainframes" or press the "M" key. Press Enter.

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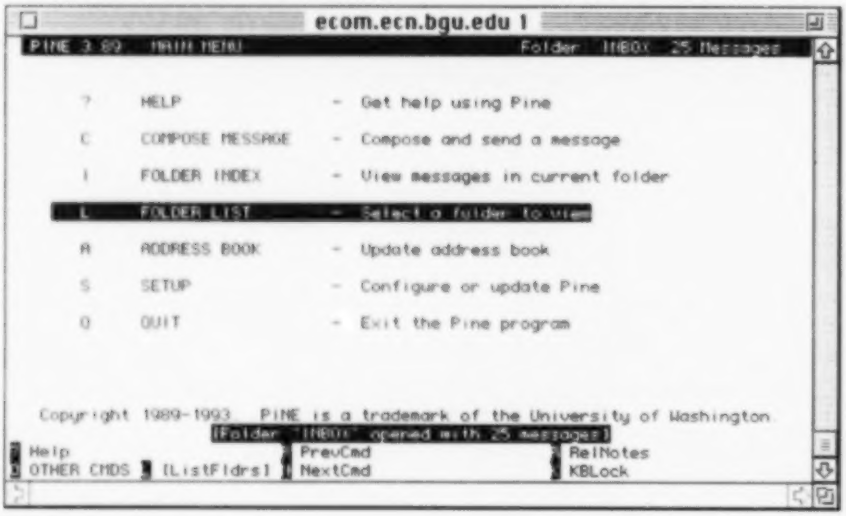
6. When prompted about where you would like to telnet, type "ecom" (ENTER)

7. Login to ecom:
   a. You will be prompted to login; type in your "muxxx" login account name (press Return) and your password (press Return)
   b. When you are asked to choose a printer, type the printer you want or press Return if you do not plan to print.

Opening "Pine" To Compose or Read an Electronic Message

1. At the ecom% prompt, type "pine" (all lowercase letters, no quotation marks)

2. The window below appears:



```
PINE 3.89   MAIN MENU                               Folder: INBOX  25 Messages


      ?     HELP               -  Get help using Pine

      C     COMPOSE MESSAGE    -  Compose and send a message

      I     FOLDER INDEX       -  View messages in current folder

      L     FOLDER LIST        -  Select a folder to view

      A     ADDRESS BOOK       -  Update address book

      S     SETUP              -  Configure or update Pine

      Q     QUIT               -  Exit the Pine program



   Copyright 1989-1993.  PINE is a trademark of the University of Washington.
                      [Folder "INBOX" opened with 25 messages]
  Help                        PrevCmd                        RelNotes
  OTHER CMDS   [ListFldrs]    NextCmd                        KBLock
```

3. If you wish to compose and send a new message, press "C."
   a. Enter the person's electronic address (e.g., mgmhb) and press Return.
   b. Tab to the subject line and enter the subject of your message (press Return).
   c. Tab to the message area and type in your message.
   d. Press Control-X to send the message. You will be asked if you really want to send it—type "Y" for yes!

4. If you want to read and respond to current messages in your pine mailbox, press "L" at the main Pine menu.
   a. Move the cursor with the arrow keys to highlight the message you want and press Enter to read the original message. Press R to reply to the original message.
   b. Press Y or N to include or not include the original message in your reply; press Y or N to reply or not reply to all recipients of the original message.
   c. Type your response and press Control-X (^X) to send.

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Electronic Searching for Children's Literature Resources

Mary Ann Capan & Nancy L. Chu

Ameritech

Western Illinois University

Tools for Teaching with Technology

The WIU Approach
to Integrating Technology
into Teacher Education

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Electronic Searching for Children's Literature Resources

Mary Ann Capan and Nancy L. Chu, Department of Elementary Education and Reading

Module Context

Course Description

LLA 313 - Children's Literature. This course is a survey of literature for preschool through grade six, with an emphasis on critical analysis and evaluation of books in various genres.

Course Prerequisites

None

Recommended Core Modules To Complete Prior to This One

Using the Computer To Enhance Teacher Productivity (helpful but not required)

Telecommunications for the K-12 Classroom (This module includes a section on electronic database searching which would be useful.)

Additional Courses Where Module Could Potentially Fit

LLA 433 - Literature for Young Adults
LLA 513 - Advanced Children's Literature
LLA 523 - Advanced Literature for Young Adults

Other Relevant Student Characteristics

Preservice classroom teachers at the early childhood, elementary, and secondary levels

Module Focus

Title of the Module

Electronic Searching for Children's Literature Resources

Content Area of the Module

Locating bibliographic resources in children's literature

Description of the Module

Using *Elementary School Library Collection* (19th edition) in CD-ROM format and appropriate print resources, students will compile a bibliography of children's books on an assigned topic. The skills they learn here on using an electronic database will transfer to other search assignments in this course and in other courses as well.

Ameritech Student Outcome(s) Supported

- To identify resources for a wide array of academic subjects for elementary and secondary grade levels.
- To use communications technologies to enhance personal and professional productivity.
- To identify resources for staying current in applications using communications technologies in education.

Specific Module Objectives

- To understand the purpose and function of the various bibliographic resources in children's literature.
- To use CD-ROMs of bibliographic resources to search for topics.
- To search other similar databases for information concerning children's literature and biographical information on authors and/or illustrators.

Technology Competencies Developed Through the Module

Hands-On Experience

Students will have the experience of searching the CD-ROM database for the information appropriate to their topic.

Module Contents

Teaching Strategies

The instructor will

- be responsible for the evaluation and selection of the books which will be assigned to the students and from which they will derive their individual topics.
- explain the assignment objectives and process to the students.

- address student questions pertaining to the assignment at the outset.
- participate in the orientation to the database by modeling the appropriate search strategies.
- be available for questions during the course of the assignment.
- assess the performance of the students after the assignment is completed.

Learning Strategies

The students will

- participate in the orientation to the database.
- select one of the books provided by the instructor.
- locate the appropriate subject headings in the book.
- search the assigned print resource materials to compile a bibliography of children's books pertaining to the topic.
- search *Elementary School Library Collection* (19th edition) on CD-ROM.
- record the appropriate titles as they are located in each resource.
- proof their individual bibliographies to ensure proper bibliographic format and completeness.
- hand in the completed assignment by the designated deadline for evaluation.

Ways Students Will Demonstrate Competency/ Assessment

The assignment will be evaluated according to the following criteria:

- Were all assigned resources searched?
- Does the bibliography contain the proper number of citations for each resource?
- Are the bibliographic citations complete and written in proper format?
- Is the search strategy apparent?
- Is the assignment presented in an acceptable professional format?
- Were all assignment directions followed carefully?

Ways Students Will Learn How To Use Technology in Their Classrooms

In this assignment, the students will be using professional resources. It is unlikely that a teacher would expect students to use these except in rare circumstances; however, the hands-on experience gained by the preservice teacher will transfer to future students as it translates into confident use of a CD-ROM database, a competency which teachers must regularly model for students. In addition, the ability to locate appropriate materials efficiently is an imperative for teachers. The experience of building a sample bibliography in one content area will certainly transfer to other curriculum areas.

Module Implementation

Print Materials Needed

- Children's book assigned by the instructor at the beginning of the assignment
- A copy of the assignment distributed by the instructor (see Supplementary Materials)
- Bibliographic resources in the area of children's literature

Equipment/Technology Needed

Computer with attached or internal CD-ROM drive

Software or Other Electronic Media Needed

Elementary school library collection (19th ed.). (1994). Available from Brodart Co. Call (800) 233-8467 for ordering information.

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Supplementary Materials

Children's Literature Resources Assignment

Purpose of Assignment
To familiarize preservice teachers with basic reference tools that aid in identification of children's books.

Directions
Using the assigned book given to you by your instructor, you will create a bibliography of children's books.

1. Write a complete citation for your assigned book using the following format:

   Appelbaum, Diana. *Giants in the Land*. Illus. by Michael McCurdy. Houghton Mifflin Company, 1993.

2. Consult *Children's Books in Print, 1995* (Main Library Reference—Z 1037 .A1 C482) and answer the following:

   A. Using "Author Index" in Vol. 1, determine how many individual titles your author has written which are currently in print. Your response will be a number. Count each individual title only once.

   B. Using "Illustrator Index" in Vol. 1, determine how many individual titles your illustrator has illustrated which are currently in print. Your response will be a number. Count each individual title only once.

   C. Using "Children's Book Awards and Selected Listings Index" in Vol. 1, determine the 1992 winner of the Scott O'Dell Award for Historical Fiction. Give both author and title.

   D. Using "Title Index" in Vol. 2, determine how many books have the same title as your assigned book. Your response will be a number.

   E. Using "Key to Publishers' Index" in Vol. 2, determine full name and address of the publisher for your assigned book.

3. List the main subject(s) for your assigned book which can be located as part of the CIP on the copyright page. They are circled in the following example:

   Appelbaum, Diana Karter.
   Giants in the Land/Diana Appelbaum; illustrated by Michael McCurdy. p. cm.
   Summary: Describes how giant pine trees in New England were cut down during the colonial days to make massive wooden ships for the King's Navy.
   ISBN 0-395-64720-7
   1. White pine—New England—History—Juvenile literature.
   2. Logging—New England—History—Juvenile literature.
   3. Masts and rigging—History—Juvenile literature. [1. White pine. 2. Trees. 3. Logging—History. 4. Shipbuilding—History.] I. McCurdy, Michael, ill. II. Title.

4. Using one of these subjects, consult *Subject Guide to Children's Books in Print. 1994* (Main Library Reference—Z 1037 .A1 C483). From the list of books presented, prepare citations for any **three** books using the following citation format:

   Appelbaum, Diana. *Giants in the Land*. Illus. by Michael McCurdy. Houghton Mifflin Company, 1993. **(Grades 2-6)**

As you continue your search, DO NOT repeat any book titles. You might have to change your subject heading because you may run out of brand new titles. Keep me informed as to what EXACT subject heading you used for EACH reference book as the wording for subject headings varies from book to book.

5. Consult one of the following titles: **Tell me which title you choose** (your choice depends on which grade level you prefer).

   A. *Children's Catalog*. 16th ed., 1991 (Location: Main Library Reference—Z 1037 C5443) **(Picture books do not have a grade suggestion, so use EASY.)**

   B. *Junior High Catalog*, 6th ed., 1990 (Location: Main Library Reference—Z 1037 W7752) **(No grade suggestion is given.)**

   Using the same subject heading, consult the back of the book where you will find "Author, Title, Subject, and Analytical Index." After choosing **three titles**, consult the appropriate pages in the main body of the book to locate complete citation information for each of the three titles. Add these three titles to your assignment using the required format.

6. Consult any yearly *Supplement* to the index you used in #5. (Same location) **Tell me which year you choose.** Using the same subject heading and the same procedure, locate the complete citation information for **one title**. Add this one title to your assignment using the required citation format.

7. Consult *A to Zoo. 3rd edition* (Location: Main Library Reference—PN 1009 A1L55 OR 4th edition on reserve at Circulation Desk of Curriculum Lab).

   Using the same subject heading, consult the front of the book where you will find "Subject Index." If this source does not use your exact subject heading, locate a similar term. Locate this subject heading in the main body of the book. Select any **three** titles. To obtain the complete citation information for these three titles, turn to the back of the book and consult the "Bibliographic Guide" which is arranged alphabetically according to the author's last name. Add these three titles to your assignment using the required format. **(No grade level required for citations because all books in this source are picture books.)**

8. Consult either the CD-ROM or print version of the *Elementary School Library Collection. 19th edition. 1994*

   CD-ROM location: HH66 Computer Lab. See attached instructions for locating the CD-ROM version of ESLC. Search the database using your subject headings. Select three titles, locate the complete citations, and add them to your assignment. Add the grade level, interest level, and readability level as well.

   Print version location: On reserve in Curriculum Lab. Using the back of the book where you will find "Subject Index," locate your subject heading. After choosing **three** titles, consult the appropriate pages in the main body of the book to locate complete citation information for each of the three titles. Add these three titles to your assignment using the required citation format. Grade level can be found by consulting "Sample Entry" on page XXII. Give both (1) interest level and (2) readability.

9. Consult Curriculum Lab's Card Catalog using the same subject heading. Prepare complete citations for any **three** titles. Complete citation information is not always given on card, so supply as much information as you can.

****Grade level indication is sometimes missing from resources #4-9, so add a statement ("Grade Not Given") to keep me informed.

Assignment Format

- The assignment must be written on standard size loose leaf or typing paper. Typewritten papers are encouraged but not required.
- Papers written in longhand should be written in blue or black ink using one side of each sheet. **Legibility is a must!**
- Errors should be corrected before the paper is handed in. Strike-overs or cross-outs are not acceptable.
- When the assignment includes several pages, please staple in the upper lefthand corner. Do not use plastic covers.
- Your name should be on a cover sheet or at the upper righthand corner of the first page. If your assignment involves more than one page, please place your name on each page.

Due Date: ______________________

Evaluation

Do you have the proper number of citations for each reference book?

Are the citations complete and written in proper format?

Have you kept me informed as to subject heading(s) used?

Was the assignment neat and professional in appearance?

Did you follow the assignment format?

Instructions for Using
Elementary School Library Collection CD-ROM

The following are directions for using the CD-ROM version of *Elementary School Library Collection* (ESLC) in the Horrabin Computer Lab.

1. Get the following from the lab assistant:
    - *Elementary School Library Collection* CD-ROM
    - CD-ROM caddy
2. Go to computer station #4 in the HH66 main computer lab.
3. Restart the computer by pressing the Reset button on the front of the computer.
4. Select number 2 (CD-ROM) from the startup menu.
5. Insert the CD-ROM into the CD-ROM caddy and put it into the CD-ROM drive.
6. Type C: [ENTER]
7. Type RUNESLC
8. When the program begins, press any key to get past the title screen. Then select F3 to begin a search.
9. Use the down arrow to go to the Subject line. Type in a subject word that you would like to search. You may need to broaden or narrow your word search if it doesn't recognize your subject.
10. Use the arrow keys to scroll through the list of subject selections that appear. Press ENTER to choose the subject you want.
11. Use the arrow keys to scroll through the list of books until you identify the one you want. Press ENTER.
12. Record the citation for your assignment.

Children's Literature Resources Assignment

Student Sample

1. Pflieger, Pat. *The Fog's Net.* Illus. by Ruth Gamper. Houghton Mifflin Company, 1994.

2. A. My author has *one* title currently in print.

   B. The illustrator has *one* book which is currently in print.

   C. Mary D. Hahn, *Stepping on the Cracks*, won the Scott O'Dell award in 1992.

   D. There is no other book with that title.

   E. The name and address of the publisher is:

   Houghton Mifflin Company
   222 Berkeley Street
   Boston, MA 02116

3. The main subjects of the book:

   Fog-Fiction
   Weaving-Fiction
   Brothers and Sisters-Fiction

4. *Subject Guide to Children's Books in Print, 1994*

   (Subject Brothers and Sisters)

   Adler, Katie, & McBride, Rachael. *For Sale: One Sister—Cheap!* Illus. by Mike Venezia. Children's Pr, 1986. (Grades preschool-3)

   Blackman, Malorie. *Girl Wonder & the Terrific Twins.* Illus. by Lis Toft. Dutton Children's Books, 1993. (Grades 2-5)

   Fitzgerald, John. *The Baby Brother.* Illus. by Margaret Power. SRA School Group, 1994. (No Grade Listed)

5. *Children's Catalog*

   Angell, Judie. *A Home Is To Share- and Share- and Share-.* Bradbury Press, 1984. (Grades 4-6)

   Cresswell, Helen. *Dear Shrink.* Macmillan, 1982. (Grades 5 and up)

   Shyer, Marlene Fanta. *Welcome Home, Jellybean.* Scribner, 1978. (Grades 5 and up)

6. *Supplement 1995*

   Caseley, Judith. *Harry and Arney.* Greenwillow Books, 1994. (Grades 2-4)

7. *A to Zoo, 3rd edition*

Henkes, Kevin. *Sheila Rae, the Brave.* Greenwillow Books, 1987.

Robins, Joan. *My Brother, Will.* Illus. by Marylin Hafner. Greenwillow Books, 1986.

Titherington, Jeanne. *A Place for Ben.* Greenwillow Books, 1987.

8. *Elementary School Library Collection, 19th edition, 1994*

(Subject Fog)

Bacheller, Irving. *Lost in the Fog.* Illus. by Loretta Krupinski. Little, Brown, 1990.
Grade level: Second - Third Grade
Readability: 6

Tresselt, Alvin R. *Hide and Seek Fog.* Illus. by Roger Duvoisin. Lothrop, Lee & Shepard, 1965.
Grade level: Kindergarten - Second Grade
Readability: None given

Fleischman, Sid. *Ghost on Saturday Night.* Illus. by Eric Von Schmidt. Little, Brown, 1974.
Grade level: Third - Fifth Grade
Readability: 4

9. Curriculum Library's Card Catalog

Lapp, Eleanor. *In the Morning Mist.* Illus. by David Cunningham. 1978.

(Subject Weaving)

Grossman, Virginia, & Long, Sylvia. *Ten Little Rabbits.* 1991.

Heyer, Marilee. *The Weaving of a Dream: A Chinese Folktale.* Viking Kestrel, 1986.

Microteaching, Reflective Processing, and Video: A Metacognitive Twist

Dr. Avril von Minden

Ameritech
WIU Western Illinois University

Tools for Teaching with Technology

The WIU Approach to Integrating Technology into Teacher Education

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Microteaching, Reflective Processing, and Video: A Metacognitive Twist

Dr. Avril von Minden, Department of Educational Foundations

Module Context

The expectation is for this module to be used in electronic classrooms. According to Sheingold and Hadley (1990), in schools housing two times as many available computers as that of the national average, only about one teacher per school integrated technology into his or her teaching. This module was designed as a scaffold for preservice teachers to begin integrating technology into microteaching segments that cover course content.

Course Description

EDFD 301 - Educational Psychology. An introduction to the state of knowledge in contemporary educational psychology. Topics include cognitive processing, human motivation, instructional planning, assessment and evaluation, standardized testing, teacher-based assessments, and classroom management. A study is made of the teaching-learning process.

Course Prerequisites

EDFD 201 - Human Growth and Development

Recommended Core Modules To Complete Prior to This One

Instructional Video Production for the K-12 Classroom helpful, but not necessary

Additional Courses Where Module Could Potentially Fit

This module is applicable for implementation in methods courses at all levels—early childhood through secondary.

Other Relevant Student Characteristics

Teacher education students who are beginning to develop teaching skills

Module Focus

Title of the Module

Microteaching, Reflective Processing, and Video: A Metacognitive Twist

Content Area of the Module

Educational Psychology

Description of the Module

"Microteaching, Reflective Processing, and Video" was designed to assist novice teachers in weaving two strands of knowledge—content and pedagogical—into a coherent fabric (Shulman, 1986). A "loom" metaphor was used to describe how technology serves as a tool for preservice teachers to begin the processes of (1) reflecting on their own teaching of a segment of educational psychology course content (microteaching), as well as (2) observing teaching by members of their cohort. Thus, students view practice and course content from several perspectives—their own, that of the instructor, and those of their peers.

Ameritech Student Outcome(s) Supported

- To evaluate and use communications technologies, along with computers and multimedia, to support the instructional process.
- To use communications technologies to enhance personal and professional productivity.

Specific Module Objectives

- To engage students in the process of reflecting on their own teaching practice.
- To receive feedback from members of their cohort.
- To learn how to operate a camcorder.
- To gain early experience and confidence in utilizing multimedia resources to support teaching a 15-minute segment of course content.

- To practice using interactive instructional strategies.

- To master course content.

Objectives will be met through . . .

- the use of instructional video:
    - filming
    - integrating video into early childhood through secondary education
- interactive multimedia:
    - integration of multimedia into early childhood to secondary education
- teaching strategies for a technology-rich environment:
    - selection of technology tools to fit content, learning objectives, instructional and learning activities, and student characteristics
    - identification of and access to technology tools and resources
    - evaluation of the effectiveness of technology-enhanced instruction

Technology Competencies Developed Through the Module

Awareness

Students will observe the instructor modeling the use of technology in teaching and the use of videotaped instruction as a means for reflecting on/improving one's own teaching.

Hands-On Experience

Students will practice microteaching that includes the use of technology.

Skills Development

Students will operate a camcorder and a VCR.

Module Contents

Teaching Strategies

The instructor assumes a dual role in the implementation of this module: he or she serves as a trainer and as a coach. As a trainer, the instructor models the use of the technology. He or she also provides one class period for inservice training on all the media and equipment that students are expected to use during their microteaching presentations. In addition, the instructor invites student participation throughout the first half of the semester. In order to gain formative evaluation on the instructor's own teaching, it is a good idea to videotape segments of instruction throughout the semester. In that way, students receive modeling on the part of the teacher-trainer. As a coach, the instructor provides feedback on individual student performances as well as corrective feedback with regard to the content.

Learning Strategies

During the microteaching segments, students act as peer evaluators and as "instructors." Two of the criteria for the teaching presentations are the incorporation of (1) innovative instructional opportunities and (2) student participation. Innovative instructional opportunities encompass both the technology as well as the requirement for collaboration. Each presenter selects a partner to tape the instructional segment. (Each presenter is responsible for purchasing his or her own videotape.) The remainder of the students assume the roles of learner and evaluator. They each fill out a Student Feedback Sheet and give it to their presenting colleague. Coterminous with the involvement of all students in the class, the instructor also videotapes each teaching presentation. The instructor completes an Instructor Feedback Sheet for each student. These feedback sheets are retained by the instructor until the student has first submitted a self-evaluation report. Students view the taped presentations and then complete a self-evaluation report that includes the student self-evaluation form as well as a well-developed short essay evaluating their performance (Moss, 1996). The Teacher Evaluation Components (M. Hunter) handout in the Supplementary Materials serves as a guide to focus attention on key teaching components. Once the self-evaluation report is turned in, the student has the opportunity to schedule time with the instructor to discuss the instructor's feedback sheet. Students may elect to view the segment along with the instructor.

Assessment

Students will demonstrate that they have met instructional objectives by

- writing a self-evaluation report.
- filling out a feedback report for each colleagues' presentation.
- successfully videotaping a partner's presentation.
- microteaching a segment of course content using multimedia resources.

Ways Students Will Learn How To Use Technology in Their Classrooms

- Recent trends in the employment of alternative assessments for students and teachers is emphasized. Students are required to include their evaluation forms in their class portfolios.
- Discussions are held that emphasize the importance of viewing learners as active participants and the necessity of engaging students in activities that require thinking at levels of analysis and synthesis. Modeling is stressed as a powerful variable affecting learning.
- Discussions are held about the importance of assuming multiple perspectives in the process of evaluation (Moss, 1996).

Module Implementation

Print Materials Needed

Instructor Feedback Sheet
Student Feedback Sheet
Teacher Evaluation Components
Mini-Electronic Classrooms Job Aid

These materials were developed in collaboration with Dr. Georg Gunzenhauser.

Equipment/Technology Needed

½" VHS camcorder (or 8 mm camcorder), Elmo visual presenter, and VCR

Software or Other Electronic Media Needed

½" VHS videotapes (or 8 mm tapes and adaptor case for standard VCR)

Implementation Recommendations

Based on student evaluations of the effectiveness of the module activities, it is important to . . .

- prohibit multiple students from recording on a single videotape.
- assign text pages to individual students, but allow students to "swap" content assignments.
- provide print copies of all assessment criteria at least three weeks before the start of presentations.
- keep a "spare" videotape in the event of malfunctions.
- assign a value or weight to the three related activities as one of a number of types of assessment during the course.
- refuse to show students instructor feedback sheets before they have turned in their self-evaluation reports.

Bibliography

Ayersman, D. J., & von Minden, A. (1995). Individual differences, computers, and instruction. *Computers in Human Behavior, 11*(3-4), 371-379.

Moss, P. A. (1996). Enlarging the dialogue in educational measurement: Voices from interpretive research traditions. *Educational Researcher, 25*(1), 20-28.

Sheingold, K., & Hadley, M. (1990). *Accomplished teachers: Integrating computers into classroom practice.* (ERIC Document Reproduction Service No. ED 322 900)

Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher, 15*(2), 4-14.

Supplementary Materials

Instructor Feedback Sheet

Student Name: ____

Date of Presentation: ___/___/19___   Record Start: ___:___   Record End: ___:___

Page Count Covered: ____-____

Issue 1: Degree to which presenter covered the assigned pages in an accurate and meaningful manner

Score: ____ of 10

Issue 2: Degree to which presenter incorporated innovative instructional opportunities into the presentation

Score: ____ of 10

Issue 3: Degree to which presenter incorporated student participation into the presentation

Score: ____ of 10

Issue 4: Degree to which presenter utilized the full environment during the presentation

Score: ____ of 10

Issue 5: Total effectiveness of the presentation

Score: ____ of 10

Average Score: ____ of 10

Student Feedback Sheet

Instructions: As highlighted in the course syllabus, you—as a recipient of peer instruction—have the opportunity to provide constructive feedback to both the course instructor and the peer presenter. In considering the following issues related to the peer presentation, make certain to provide as objective and constructive a response as possible. Five issues have been identified for your consideration:

Issue 1: Degree to which presenter covered the assigned pages in an accurate and meaningful manner
Issue 2: Degree to which presenter incorporated innovative instructional opportunities into the presentation
Issue 3: Degree to which presenter incorporated student participation into the presentation
Issue 4: Degree to which presenter utilized the full environment during the presentation
Issue 5: Total effectiveness of the presentation

Relying on what you had the opportunity to observe during the peer presentation, *provide a rating between the values of 1 (very limited effectiveness in achieving issue) and 5 (very high effectiveness in achieving issue).*

Presenter Name	Issue 1	Issue 2	Issue 3	Issue 4	Issue 5

Teacher Evaluation Components

(Adapted from Marie Hunter [1982] *Mastery Teaching*. El Segundo: TIP Publishers.)

Management of Instructional Time:

1. Has materials, supplies, and equipment ready at start of the lesson or instructional activity.
2. Gets the class started quickly.
3. Gets students on task quickly at the beginning of each lesson or instructional activity.
4. Maintains a high level of student time-on-task.

Management of Student Behavior:

1. Has established a set of rules and procedures that govern the handling of routine administrative tasks.
2. Has established a set of rules and procedures that govern student verbal participation and talk during different types of activities—whole-class instruction, small group instruction, and so on.
3. Has established a set of rules and procedures that govern student movement in the classroom during different types of instructional activities.
4. Frequently monitors the behavior of all students during whole-class, small group, and seat work activities and during transitions between instructional activities.
5. Stops inappropriate behavior promptly and consistently, yet maintains the dignity of the student.

Instructional Presentation:

1. Begins lesson or instructional activity with a review of previous material.
2. Introduces the lesson or instructional activity and specifies learning objectives when appropriate.
3. Speaks fluently and precisely.
4. Presents the lesson or instructional activity using concepts and language understandable to the students.
5. Provides relevant examples and demonstrations to illustrate concepts and skills.
6. Assigns tasks that students handle with a high rate of success.
7. Asks appropriate levels of questions that students handle with a high rate of success.
8. Conducts lesson or instructional activity at a brisk pace, slowing presentations when necessary for student understanding but avoiding unnecessary slowdowns.
9. Makes transitions between lessons and between instructional activities within lessons efficiently and smoothly.
10. Makes sure that assignment is clear.
11. Summarizes the main point(s) of the lesson at the end of the lesson or instructional activity.

Instructional Monitoring of Student Performance:

1. Maintains clear, firm, and reasonable work standards and due dates.
2. Circulates during classwork to check the performance of all students.
3. Routinely uses oral, written, and other work products to check student progress.
4. Poses questions clearly and one at a time.

Instructional Feedback:

1. Provides feedback on the correctness or incorrectness of in-class work to encourage student growth.
2. Regularly provides prompt feedback on assigned out-of-class work.
3. Affirms a correct oral response appropriately and moves on.
4. Provides sustaining feedback after an incorrect response or no response by probing, repeating the question, giving a clue, or allowing more time.

Facilitating Instruction:

1. Has an instructional plan which is compatible with the school and systemwide curricular goals.
2. Uses diagnostic information obtained from tests and other assessment procedures to develop and revise objectives and/or tasks.
3. Maintains accurate records to document student performance.

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4. Has instructional plan that matches/aligns objectives, learning strategies, assessment, and student needs at the appropriate level of difficulty.
5. Uses available human and material resources to support the instructional program.

Interacting within the Educational Environment

1. Treats all students in a fair and equitable manner.
2. Interacts effectively with students, co-workers, parents, and the community.

Performing Non-Instructional Duties

1. Carries out non-instructional duties as assigned and/or as need is perceived.
2. Adheres to established laws, policies, rules, and regulations (Morals Clause).
3. Follows a plan for professional development and demonstrates evidence of growth.

Rating Scale

Superior

Performance within this function area is consistently outstanding. Teaching practices are demonstrated at the highest level of performance. Teacher continuously seeks to expand scope of competencies and constantly undertakes additional, appropriate responsibilities.

Well-Above Standard

Performance within this function area is frequently outstanding. Some teaching practices are demonstrated at the highest level while others are at a consistently high level. Teacher frequently seeks to expand scope of competencies and often undertakes additional, appropriate responsibilities.

Above Standard

Performance within this function area is frequently high. Some teaching practices are demonstrated as a high level while others are at a consistently adequate/acceptable level. Teacher sometimes seeks to expand scope of competencies and occasionally undertakes additional, appropriate responsibilities.

At Standard

Performance within this function area is consistently adequate/acceptable. Teaching practices fully meet all performance expectations at an acceptable level. Teacher maintains scope of competencies and performs additional duties as assigned.

Below Standard

Performance within this function area is sometimes inadequate/unacceptable and needs improvement. Teacher requires supervision and assistance to maintain an adequate scope of competencies, and sometimes fails to perform additional responsibilities as assigned.

Unsatisfactory

Performance within this function area is consistently inadequate/unacceptable and most practices require considerable improvement to fully meet minimum performance expectations. Teacher requires close and frequent supervision in the performance of all responsibilities.

Mini-Electronic Classrooms Job Aid

(Horrabin Hall 2, 4A, 24, 35)
(By Fall '96: 22A, 23)

General Description

These rooms are Level 3 classrooms. This means that a PowerMac computer, VCR, and Elmo visual presenter are available to the instructor. All images are routed through a ceiling-mounted video projector (Eiki). Every attempt has been made to make these rooms as easy to use as possible. However, it is a good idea to practice at least once before using the room for the first time.

Equipment Setup for Classroom Instruction

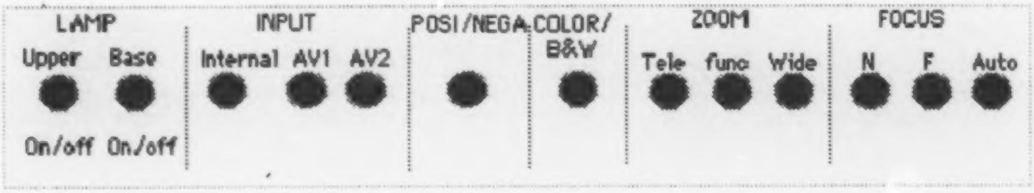
Step 1
Turn on the following equipment:

- Elmo visual presenter (left, rear side switch)
- Computer (upper, right button on keyboard that has an arrow pointing left)
  Note: The computer will not boot properly if there is a CD in the CD-ROM drive. You may insert a CD-ROM *after* the computer is on and displaying the desktop.
- Scan converter (This *must* be turned on *after* the computer to work properly.)
- VCR (power switch on the front, left)
- Video projector (Point the Eiki remote control device toward the ceiling-mounted projector and press the Power switch. You will hear a tone and the fan turning on. "Standby" will appear on the large screen along with a countdown timer.

Step 2
Select which device's image you wish to have projected on the screen. Do this by pressing the labeled buttons on the Elmo visual presenter as follows:

Buttons:	*Desired Device:*
Internal:	Elmo (Go to Step 3)
AV1:	VCR (Go to Step 4)
AV2:	Macintosh computer (Go to Step 5)

Step 3
If you plan to use the Elmo to display a visual, complete Step 2 and then do the following:



- Select the "Upper" button to turn on the upper lamps for displaying 3-D objects, print materials, or any nontransparent item. Select the "Base" button when you want to illuminate transparencies or 35mm slides.

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- Place the object to be projected on the Elmo surface.

- Press the "Tele" button to zoom in as far as it will go. Adjust the focus using the "Auto" focus button and zoom back out (press "Wide" button). At this point, the image should be clear.

- If the image still appears to be blurred on the screen, adjust the focus button on the Eiki video projector's remote control device. Always adjust the Elmo focus first; then the Eiki.

Step 4
To use the VCR, complete Step 2, insert the videotape into the VCR, and then operate it with the VCR's remote control device.

Step 5
To use the Mac, complete Step 2, and then use the keyboard and mouse.

Trouble-shooting:

- If the computer was turned on *before* the scan converter and "AV2" has been selected on the Elmo, the computer screen should be visible on both the computer and the large screen.

- If you have no picture on the large screen, it may be because the video projector (on the ceiling) is set incorrectly. To correct the projector setting, press V-mode on the Eiki remote control device. The current setting will be displayed on the large screen (AV1 or AV2). Press the V-mode button again to switch to AV2 if AV1 appears on the screen.

- When playing sound, adjust the volume by pressing the Volume button on the Eiki remote control device, not on the computer.

- If you need assistance with equipment in these rooms, contact Doug Menke (or his staff). They are usually located in the Electronic Classroom area (HH53) or the SENIT (HH101) office. The Faculty ID Lab personnel can also help (HH39).

Step 6
When you are finished with your class,

- Shut off all of the equipment.

- Relock the cupboard.

- Exchange the cupboard key for your key.

- Relock the classroom as you leave.

College of Education and Human Services
Western Illinois University
Macomb, Illinois

1996

Supported by
The Governor's Ameritech EdTech Grant

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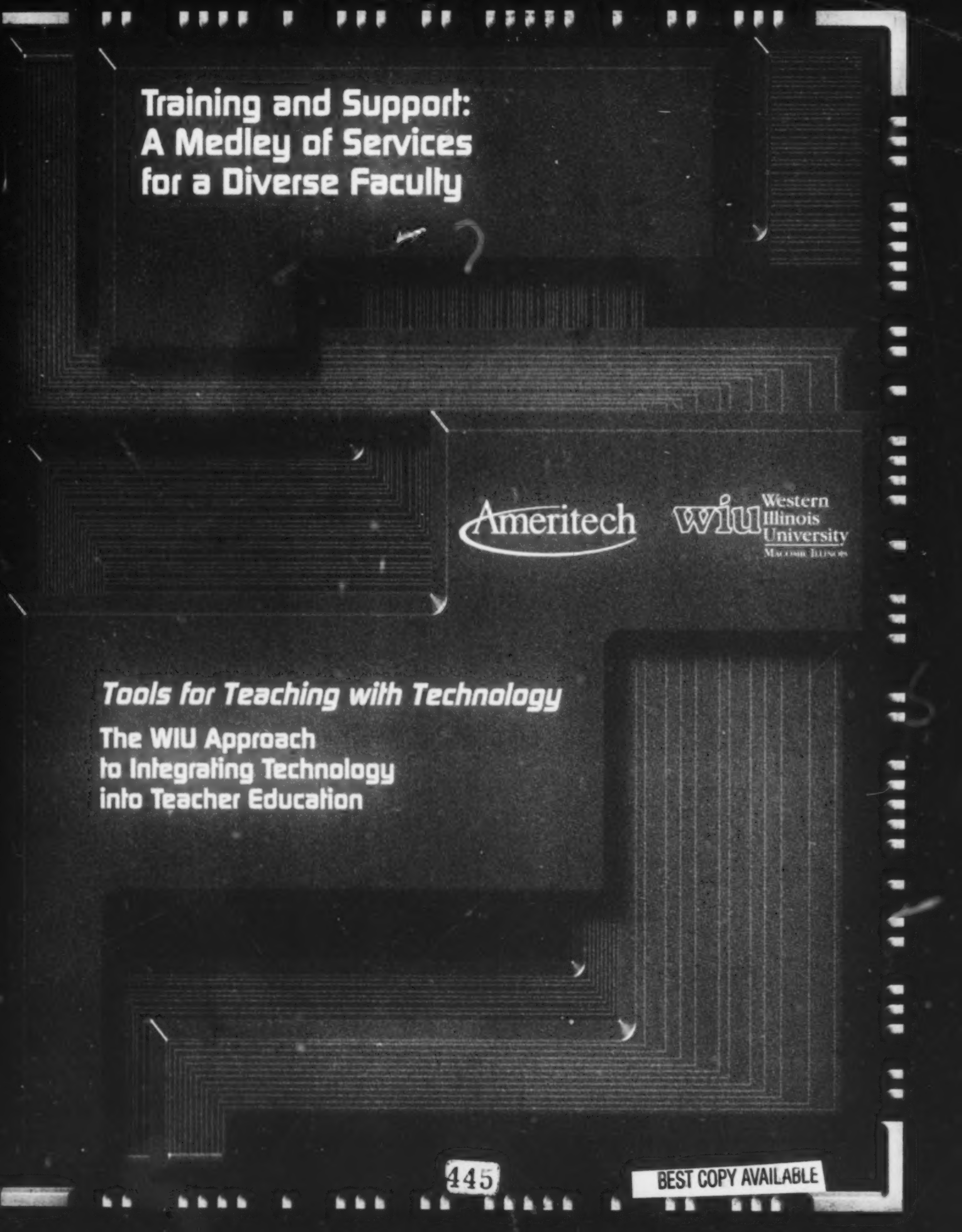

Training and Support: A Medley of Services for a Diverse Faculty

Ameritech

wiu Western Illinois University
Macomb Illinois

Tools for Teaching with Technology

The WIU Approach to Integrating Technology into Teacher Education

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Training and Support: A Medley of Services for a Diverse Faculty

Time Line of Faculty Support for Technology Integration

Several years ago, the College of Education at Western Illinois University began working diligently on locating additional resources and reallocating existing personnel dollars to initiate a systemic integration of technology into teacher education. The Dean believed that the ongoing commitment of his office was critical to the success of such a project, but that it was the faculty reaching the preservice teachers every day, in and out of the classroom, who would need to make it happen. He knew that these same people were already heavily committed to other agendas—an already-crowded, state-mandated teaching curriculum; research projects; grant work; university committees; and other professional activities. Most had a computer on their desk but were using it primarily for word processing. Many were very interested in other applications of technology to their daily work, but few had experience using it in the preK-12 classroom or in their higher education classes.

It was decided, then, that the challenge of empowering faculty to teach with and about technology for the preK-12 classroom would require support from an instructional designer, preferably one with a doctorate and higher education teaching experience who could garner credibility in the minds of the faculty he or she would serve, yet be sensitive to the wide range of technology experience in the faculty as a whole. It was anticipated that this person would assist the faculty in

- finding a type and level of technology involvement that they could find personally satisfying.
- getting up to speed with using technology in their own teaching so as to serve as role models for preservice teachers.
- learning about and implementing the complementary teaching strategies often used where technology is available (i.e., engaged learning, collaborative learning, thematic learning).
- designing curriculum, authentic activities, and student assignments so that preservice teachers could acquire technology skills and experience through their coursework.

By the spring of 1993, I was hired as the College's instructional designer to open a new office (later named the Faculty Instructional Development Lab [FIDL]) that would support ~110 faculty in six departments serving ~1,600 teacher education students. The objectives listed above have remained the primary focus of FIDL and provided the basis for its mission (See "Faculty Instructional Development Lab" flyer in the Supplementary Materials section of this monograph); however, the scope of what that entails has expanded as we have learned what "works," as the needs of the faculty have matured, and as the availability of resources has increased.

Five months after my arrival, WIU received the Governor's Ameritech EdTech Grant which allowed us to accelerate our progress by involving faculty in a multitude of technology-related activities and by providing additional equipment and software for them to use in their own teaching and the learning activities of their students. Within a year, WIU reorganized its administrative structure and the College of Education and Human Services (COEHS) was born, comprised of the six original departments and six new ones. My office began serving the ~220 faculty in these departments during the summer of 1994. At that time, a graduate student and student worker were added to assist me with the load. We have added a master's level instructional designer to the FIDL staff as of summer 1996.

It is my intent in this monograph to tell the story of how the Faculty Instructional Development Lab and its staff have contributed to the COEHS's efforts to effectively infuse the development of technology competencies into its teacher education program by providing training and support to the diverse faculty who deliver courses and provide supervision to our preservice teachers. I will describe

- the rich diversity of faculty we serve and the challenges that presents.

- the resources we make available to them.
- the types of training and support services we offer.
- the impact we are having on technology utilization by the faculty in WIU's teacher education programs.
- a look at where we anticipate going from here.

Who Are Our Faculty?

During a recent day, I participated in the following interactions with teacher education faculty:

- Dr. A phoned to ask how to create a private mailing list with our campus e-mail software for a university committee he chairs.
- Dr. B came to FIDL to work on the Web page he had started in a FIDL-sponsored workshop the day before, so that I could help him as he had questions.
- Dr. C sent me an e-mail message requesting the URL of FIDL's Web page so she could print out a job aid on Creating Effective Visuals for Interactive Television since she was going to be offering a workshop to area teachers on our system in a few weeks.
- Dr. D stopped by FIDL to borrow the digital camera. She was going to a preK-12 school where she planned to get some pictures for a CD-ROM she was working on.
- Dr. E arrived for some design assistance and a lesson on creating an electronic presentation for a professional conference she was to conduct in a couple of weeks.
- Dr. F stopped by to review some catalogs for software prices; he was preparing a grant proposal budget that included some software.
- Dr. G called to schedule an orientation session in one of the electronic classrooms where he would be teaching for the first time next semester.
- Drs. H, I, J, and K arrived for their weekly session with me to continue working on the content flowchart of a software program they were developing for their methods courses.
- Dr. L, Associate Dean of the COEHS, called to confirm the purchase of some new equipment for FIDL and asked me to prepare a detailed proposal with specific equipment specifications, prices, vendors, and so on. He also mentioned that we might be moving into a larger space and he wanted me to take a look at the room as a possible new location.
- Dr. M stopped by with a group of visitors from another university to offer a brief tour of FIDL's purpose, facilities, and services.
- Dr. N called to ask if FIDL had any money to help him purchase a videodisk he wanted to use in his science education methods class.
- Drs. O, P, and Q sent registrations for the upcoming workshop series *Using Technology To Create Instructional Materials.*
- Dr. R dropped in to receive a lesson on how to connect a camcorder to the computer and capture a QuickTime movie. He wanted to be able to teach his students how to do this for their portfolios they were developing on their teaching experience.
- Dr. S phoned to inquire about the procedure for reserving camcorders for her class to use for the mini-video productions they were creating in her course.
- Dr. T phoned to ask if I would visit his distance learning class the following day and make some suggestions on how he could increase the level of interaction with his remote-site students.
- Dr. U stopped by to scan in some multiple-choice questions provided in a test bank with his textbook.
- Dr. V came by to pick up the graphs he had sent to FIDL's color printer for a Statistics class he was teaching that evening.

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- Dr. W phoned to ask if we had the documentation for a software program available on the LAN because he wanted to know how to insert some special characters in the newsletter he was creating.

- Dr. X sent an e-mail requesting whether it was possible to transfer files back and forth between his PC at home and his Mac at the office.

- Dr. Y stopped to ask if it would be all right to use the handouts she had received at a recent FIDL workshop in a presentation she was conducting for an area preK-12 teacher inservice.

- Dr. Z called to see if I had any resource books on using the Internet in preK-12, as he was incorporating the subject into one of his teacher education classes.

- Dr. AA stopped by to ask if we could help her fix an unreadable floppy disk which held some valuable files.

- Dr. BB met with me to complete plans for a collaborative learning activity using some newly purchased CD-ROM materials for his methods class.

- A group of faculty experienced with teaching on our interactive television system met with me to plan their portion of a hands-on workshop for new faculty.

- I made a "house call" to assist a faculty member who needed a "where am I?" geography orientation to his hard drive, CD-ROM drive, the LAN, the Internet, and so on.

These scenarios represent the wide variety of technology support services that my office provides to the COEHS faculty community. Services have been designed to meet the diverse learning needs and learning styles of our faculty. For example, in the fall of 1993, when we embarked on implementing the EdTech grant, WIU's teacher education faculty

- **represented a wide range of technology experience.**

  The more recent Ph.D. graduates often brought word-processing, statistical analysis, and e-mail experience to their new posts at WIU, but almost none of the ~110 faculty, at the time, had experience using technology in the preK-12 classroom and only a few were using it in their higher education classes. Even the tenured, more-experienced faculty represented the full continuum from novice to expert in using a computer for daily work. Coupled with the range of technology experience was a full spectrum of confidence in using technology—many were eager to learn; others fearful and insecure—and in feelings about getting help to learn about it—most welcomed the support and sought it out; others struggled with feelings of "asking for help is a sign of weakness."

- **represented all levels of interest in changing their teaching practices to incorporate technology and the complementary instructional strategies.**

  Prior to the receipt of the EdTech Grant, many faculty were reluctant to spend the time necessary to learn technology skills *on their own* for one of the following reasons:

  (1) The computer in their office was an older model or was not hooked up to the campus network (and its software) so their equipment was not capable of running the applications they wanted to use.

  (2) There was little access to equipment/software in their classrooms.

  (3) The tenure-granting criteria in their department did not reward technology-related activities.

  (4) They did not know how technology could be incorporated into their teaching in a way that would support teacher education.

  (5) There were other state mandates for additions/revisions to teacher education curriculum that also demanded their attention.

  (6) They did not have established contact with preK-12 teachers who were using

technology and engaged learning effectively in their classrooms so they could draw on real-world examples.

The EdTech Grant helped solve a number of these problems and significantly increased the interest level on the part of many faculty. However, there was still a range of enthusiastic participation, from "I want to be first." to "Make me!," with the majority somewhere in between saying "What is here that I can handle with my level of technology experience and that fits my teaching style and content?"

- **represented many preferred ways of learning about technology.**

  As in any learner population, there were some people who had little experience with the new content (technology use in the classroom) and felt more comfortable with one-on-one assistance as they attempted to brainstorm ideas and learn new skills. These people were not anxious to "go public" with their growing technology skills by using them in their classes at first. Other faculty who were new to technology couldn't wait to get started and welcomed the opportunity to try out their new ideas, mistakes and all! Most faculty approached the opportunities with cautious enthusiasm. They sought out workshops, enjoying the group learning environment, or requested job aids (step-by-step print documentation) originally developed for the workshops and made available to them so they could work independently in their office. Some relied heavily on phone consultation or e-mail assistance from me as they attempted to apply their new skills in the classroom. Many liked the short, focused workshops offered during the regular semester, while others preferred working on projects stimulated by the more in-depth workshops offered during the breaks between semesters. A few preferred individual, private lessons in FIDL because the lessons could be paced to fit their needs. In other words, no single model of faculty training and support fit everyone.

- **represented a diversity of interest in the various technologies targeted by the grant.**

  The faculty realized they could not become experts over night in all of the targeted technologies: computer technologies, telecommunications, distance learning, interactive multimedia, and instructional video. Some of the technology competencies fit their individual teaching styles and content areas best, so they took those competencies up as the ones they wished to employ in their classes. Central to the successful integration of technology throughout WIU's teacher education curriculum was the diversity of interests exhibited by the faculty. Students were exposed to and expected to participate in the full range because the faculty they learned from integrated different technologies in different ways.

As a new instructional designer, I came prepared to work individually with content experts (i.e., faculty) in designing instruction. What I learned very quickly was that faculty didn't know what an instructional designer does, didn't know what a Faculty Instructional Development Lab can do for them, didn't know where the COEHS's FIDL was located since it was a new entity, and certainly didn't know Molly Baker personally. Therefore, I had to develop a different approach to the faculty. My objectives included serving the instructional development needs of the faculty.

- To discover creative ways to attract a diverse faculty to the possibilities of technology integration, and then hook them individually on an idea or two they can get excited about implementing.

- To design training and support programs that meet the ongoing, maturing, diverse needs and characteristics of faculty in dozens of content areas.

- To find a balance between drawing on their ideas and expertise, and offering mine.

- To create a climate which makes a diverse faculty feel comfortable about seeking assistance and about being a part of a community of learners (i.e., not feel like techno-less-thans).

- To recognize the special demands on faculty and how technology can contribute to their various pressures and expected performances, including effective teaching.

Hence, the next two sections of this monograph describe the kinds of resources and programs that were developed to support this diverse faculty as they attempted to find meaningful ways to integrate technology into teacher education.

What Kinds of Resources Have Proven Helpful to Faculty as They Have Learned About Technology Integration and Implemented Their Ideas?

Student Resources

The expanded access to technology resources for students, made possible by the EdTech Grant, has made it much easier for faculty to feel comfortable requiring technology-based assignments. For example:

- A dozen camcorders and tripods were purchased for student checkout to facilitate video development projects; two video-editing machines also made it possible for students to edit their productions.
- CD-ROM drives and videodisc players were purchased to allow review of commercially available products for the preK-12 classroom.
- Additional software, CD-ROMs, and videodiscs were purchased for students to review and incorporate into their lessons to fit many age levels, content areas, and learning styles
- A multimedia development lab with ten stations and a variety of peripheral equipment was established to provide appropriate equipment, software, and technical assistance to students developing their own instructional materials

Faculty were also involved in designing electronic classrooms in which students would be microteaching in ways that incorporated technology.

Faculty Resources

The faculty needed access to good equipment and software in a private space, away from the student labs where faculty were prone to be easily distracted by student interruptions or curiosity. The FIDL facility established such a space. It also enabled departments to focus on baseline equipment for faculty offices, since access to higher-end equipment and support would be available in FIDL. Money from the EdTech Grant enabled the COEHS to expand the equipment and software available to the faculty in FIDL. Currently, the lab resources include the following:

- high-end computers and software for production of print and electronic instructional materials as well as full access to LAN and Internet resources not always available from faculty offices
- peripheral equipment for specialized production needs (i.e., scanner, VCRs and monitors, videodisc player, FlexCam videoconferencing camera, Syquest drives, color printer, and microphone)
- a camcorder and digital camera for faculty checkout
- software documentation for many programs available in FIDL and on the campus LAN
- a rack of catalogs, periodicals, and other print resources relating to technology in education, often used to assist with grant writing and budget building or internal purchase requests
- a library of "job aids" created for workshops or in response to frequently asked questions, for people who missed a workshop or who want to learn how to do something on their own using the step-by-step guides
- a collection of instructional audiotapes for some software
- CD-ROM multimedia element collections to help "visualize" print or text-based electronic instructional materials

Finally, FIDL staff provide a human resource to the faculty. Besides the instructional designer, graduate assistant, and student worker in FIDL, other campus offices provide additional resources to COEHS faculty and often work in conjunction with FIDL staff to assist faculty on their projects. For example:

- Academic Computing staff (office equipment and e-mail troubleshooting, software assistance for the PC platform, phone-in Help Desk)

- Visual Production Center staff (photo/slide/transparency production and distance education set design)

- Faculty Development Office (occasional workshops, travel and research grants for accepted proposals, print resource library on teaching)

- Satellite Education Network and Interactive Technologies (SENIT) staff (equipment orientation in the new electronic classrooms, including the distance education facilities; video production projects; satellite teleconferences; inservice videoconferencing with student teachers and public school teachers; CD-ROM and Web page development assistance (in conjunction with FIDL)

Faculty Training and Support

Faculty Involvement

Supporting a diverse faculty in acquiring technology skills, learning how to use them in the classroom, and writing curriculum that assists teacher education students in learning how to use them in the preK-12 classroom requires a multifaceted faculty support approach. Most important is to develop a variety of "hooks" to attract faculty interest in becoming involved with the technology infusion effort. Most faculty who chose their own time and way to become involved initially, continued and expanded their level of involvement throughout the duration of the grant. For example, the EdTech Grant and FIDL encouraged faculty to get involved by inviting them to

- **assist with facility design and equipment-ordering decisions (COEHS Technology Committee).**

  Faculty who were already familiar with technology equipment and eager to use it in the classroom seemed most interested in this type of involvement.

- **contribute to the activities surrounding the relationship with our preK-12 partner school such as the distance tutoring program, inservice education, and student teacher support.**

  Faculty working with student teachers and "block" students, or those who had skills to share with the teachers at our partner school, were particularly attracted to this phase of the grant.

- **become involved with writing technology competencies for students in the six targeted areas of technology; and address the challenge of finding effective ways to implement the new curriculum throughout the college.**

  Faculty with an optimistic attitude toward the potential of technology infusion and a positive reputation within their department were recruited to participate on this special task force. They represented a wide range of technology experience and often solicited input from their colleagues, providing another way for all faculty to become involved with the development of the new curriculum. They worked on developing the competencies and also struggled with issues that would be impacted by the adoption of the competencies as across-the-board requirements, such as students enrolled at branch campuses where access to technology is more limited, secondary education students who take a limited number of COEHS courses, transfer students who may not have the "core" skills needed when they enroll in upper-division courses, inconsistencies across sections of some courses, and so on.

- **develop customized modules for their piece of the teacher education curriculum.**

  Faculty interested in trying new ideas in their teaching, writing, and presenting, and experimenting with at least one of the targeted technologies became involved here. These are the authors of the modules included in this *Tools for Teaching with Technology* package.

- **expand their own skills and teaching repertoire by seeking out training and support from the FIDL staff.**

  Hundreds of hours of training appealed to dozens of faculty; however, a cohort of about 12 took every workshop offered that first year. Similarly, new cohorts of faculty have followed a similar pattern each of the subsequent semesters. These people seem to catch the spirit at some key point and commit to "learning as much as possible this semester." They enroll in workshops; come in to FIDL to work on projects for their classes or consult with our staff; find at least one major project that catches their enthusiasm; and gain confidence in talking, doing, writing, and presenting about their experiences. Another group of faculty seem to be more comfortable taking one workshop or lesson and working with it for a semester or year before moving on for more.

- **share their experiences with using technology in the classroom with their colleagues.**

  Many of our faculty have had opportunities to do this by inviting new people to visit their classes or by presenting their ideas in FIDL-sponsored workshops, informal mentoring, WIU teaching conferences open to faculty across campus, national or regional meetings, published articles, and so on.

- **participate in the research and evaluation initiatives of the grant.**

  A few faculty with research skills and a desire to publish became involved in this activity.

In other words, many faculty found a hook that interested *them* and used it to expand their own skills and enrich the curriculum for their students. For example, one professor with minimal word processing skills at the outset signed up to write a module, took a workshop to learn some skills related to a module idea she had, worked on her idea in the FIDL lab where she had access to resources and help, represented her department on the task force to develop the technology competencies, volunteered to help with the distance tutoring project, and used her new-found skills to expand her presentation portfolio and consulting "savvy." She is known for sharing with her students: "Look what I learned today! If I can do this, so can you!"

A senior faculty member, with a broad awareness of a couple of the targeted technologies and limited knowledge about the others, took a workshop to learn about one of the new ones for him. He quietly experimented with applying his new knowledge to the development of a very specific module that fit his favorite course. He sought feedback from the FIDL staff and closely monitored what his students learned, refining the project over three semesters. Then he felt ready to share it with others with a little prodding from us!

One new faculty member worked to interest a couple of reluctant colleagues who taught other sections of his course. He believed that using e-mail would be an essential skill for future teachers and could easily be integrated into their courses without taking up valuable class time. Hence, he solicited help from FIDL to develop a user-friendly job aid (step-by-step handout) for their students, collaborated with his colleagues to build an authentic student assignment using e-mail, and helped coordinate some joint presentations sharing their experiences with a wider professional community.

Faculty Instructional Development Lab

The COEHS leadership recognized the need for instructional design and technology support long before the acquisition of the EdTech Grant. The grant provided additional equipment and software which fueled the faculty interest in getting up to speed with technology in their teaching, and in the kinds of technology experiences they provided for their students. However, as described earlier in this monograph, most of our faculty needed assistance in finding appealing, appropriate ways to integrate technology into their classes at the same time they were trying to upgrade their own skills. The FIDL staff designed a full range of services to support these activities, keeping in mind the diverse needs and interests of the teacher education faculty:

- **An ambitious training calendar that focused on instructional tasks.**

  Specific workshops targeted beginning and intermediate users. Within-term workshops were short and narrowly focused. Between-term workshops were more in-depth. Occasional customized workshops for departments or other groups within the College were also offered upon request. See "Faculty Workshops" in the Supplementary Materials section of this monograph for an annotated list of the workshops offered.

- **One-on-one lessons and demonstrations for faculty unable to attend the workshops or for faculty who felt more comfortable in a one-on-one relationship.**

  See the "Holiday Ideas: Learn Something New" flyer for a sample of between-term activities sponsored by FIDL in the Supplementary Materials section of this monograph.

- **Generous faculty lab hours for faculty to work on or practice their new skills, with support personnel handy for assistance.**

  The lab provided access to better equipment and software than what many had in their offices. It also provided a private place to experiment and ask questions, away from the bustle of student labs.

- **A complete line of job aids (step-by-step print documentation) originally developed for the workshops were made available to those who preferred working on their own in their office or who missed the workshops for one reason or another.**

  The job aids were also made available through the FIDL Web page: http://www.wiu.edu/users/mifidl/—a handy alternative for faculty housed outside the building where FIDL was located. See "Creating a Simple Presentation Using an Autotemplate" for a sample of a job aid in the Supplementary Materials section of this monograph.

- **Occasional user-group brown-bag lunch discussions with invited presenters and informal question and answer times.**

  This opportunity was wonderful for some of the faculty who got involved early to share their ideas and gain confidence in integrating technology. It also appealed to the faculty audience because it was usually not a technology-guru speaking.

- **Individual assistance in developing technology-based activities for their classes.**

  Faculty sought out assistance of many types. For example, some wanted to

  (1) brainstorm ideas on how to integrate technology into their content in ways that reflected their level of expertise with technology

  (2) receive in-depth instructional design assistance in developing a major technology-infused instructional project

  (3) develop a product for in-class use or for conference presentations and needed help in learning how to do it

  (4) locate other resources on campus (e.g., CD-ROM development team, Visual Production Center, Academic Computing)

- **Regular monitoring of preK-12 listservs by the instructional designer, forwarding postings of interest to faculty throughout the college.**

  For example, one listserv regularly posted ideas for integrating our targeted technologies into preK-12. By forwarding these ideas to faculty teaching methods courses for preK-12, they were able to select authentic assignments using technology, build meaningful links into Web pages, and establish contact with practicing teachers.

- **Assistance with grant writing when technology was being requested as part of the grant.**

  FIDL became involved with helping faculty and some departments work on portions of grant proposals that included technology. Facilitating planning sessions, describing current technology resources in the college, identifying primary technology needs to support a project idea, and building equipment or software requests or budgets were part of this process.

- **Assistance with teaching on WIU's interactive television system.**

  FIDL conducted most of the training and support for faculty teaching on the interactive television system serving our region of Illinois. SENIT also worked with faculty as they practiced using the equipment in the distance classrooms.

- **Faculty newsletter that addressed ideas for integrating technology into teaching preservice teachers.**

  See a sample issue of "Tech Channel" in the Supplementary Materials section of this monograph.

- **Sample technology-based educational products for faculty to review for ideas.**

  Often, faculty members new to technology would have good ideas, but would want to see some examples done by others to fine-tune their own project. FIDL attempted to collect samples from the Internet, from other faculty who had finished similar projects, from students who created useful projects for class assignments, and from preK-12 teachers. FIDL also sought free examination copies of software samples from commercial vendors.

- **Collection of print resources: books, catalogs, and periodicals relating to using technology in education.**

  As mentioned earlier, these resources served to help faculty interested in writing grants or other technology publications and also served as cutting-edge information for FIDL staff.

- **CD-ROM collections of clip art, sound, photo, and movie clips for inclusion in multimedia development projects.**

  Most faculty have worked most of their lives on improving their writing skills, that is, putting their ideas into words. With the new technologies, and with increased awareness of the number of visual learners, faculty are being asked to visualize their instruction. This is not easy to do! Hence, browsing through visual ideas is sometimes easier than creating ones from scratch; it is also less time-consuming, a factor not lost on busy faculty juggling multiple "balls in the air."

- **Telephone, e-mail, Web page, and walk-in availability of FIDL staff for trouble-shooting, questions and answers, or requests for information.**

  As described in other sections of this monograph, workshops and formal activities often "hook" faculty initially, but it is the follow-up assistance provided by FIDL and SENIT which is essential to the successful completion of many projects and good ideas.

What Impact Have the Faculty Training and Support Activities Had on the Technology Competencies of Teacher Education Faculty?

As the grant period progressed, FIDL staff conducted a variety of formative evaluations to fine-tune their workshops and other services. For example, faculty needs assessments to ascertain interest in learning a variety of topics related to technology in teacher education were conducted at regular intervals. Results from these assessments were used to develop the training calendars and miscellaneous other services and activities offered by the FIDL staff.

In addition, department focus groups and a questionnaire were used to ascertain how faculty perceived their technology skills compared to when the grant was first received. Thirty-five faculty of the ~80 polled responded to the questionnaire:

- 26% indicated they were more comfortable with instructional video than they were two years ago.
- 63% were more comfortable with computer technologies.
- 57% were more comfortable with interactive multimedia.
- 66% were more comfortable with telecommunications.
- 51% were more comfortable with distance education.
- 80% were more comfortable with electronic classrooms.

- 89% reported that they had increased their knowledge about technology by receiving assistance from the faculty support services offered by FIDL and/or other campus resources. In short, faculty across the College have been swept up in the excitement of trying new ways to effectively integrate technology into teacher education. We believe that the diverse training and support services offered by FIDL and SENIT in response to the rich experiences of our faculty have been instrumental in this success.

Where Do We Go from Here?

What have we learned from all of this that tells us where we should go from here? First of all, I believe FIDL's central purpose and way of work remains on target:

> To build a network of faculty committed to excellence in teaching with technology, so that our prospective teachers, administrators, and other professionals see and experience the effective use of technology in an instructional context, modeled by professors who know how to use the latest innovations or who provide direction to students as they learn technology skills relevant to their anticipated line of work.
>
> By drawing on each faculty member's strengths and experience, our staff help faculty identify resources, provide support during the development phases, and assist in the evaluation of instructional products and processes. Equipment, software, and print materials that the faculty may draw on to be successful in these activities are maintained. Frequent group or individualized training, and one-on-one consultation are available. FIDL staff strive to be responsive, supportive, organized, reliable, creative, realistic, and enthusiastic about the possibilities for developing efficient, effective, and appealing instruction, often through the integration of technology.

This mission has led our efforts as we have attempted to inspire and support faculty in their diverse modes of becoming involved with teaching with technology. It continues to be relevant, I believe. Our approach endorses the idea that faculty must find ways to become involved in a way and at a time that is right for them. The task of the FIDL staff, then, continues to be to offer numerous opportunities for them to "jump in." We must "be a light, not a judge." We must be empathic communicators who first seek to listen and understand, so that we can tailor our training or support to fit the faculty member's learning style, technology experience, available time, and interests. Then we are free to collaboratively develop innovative, practical solutions to the educational problem or opportunity presented or to identify additional support services on campus who can help meet their needs.

This monograph has described some of the opportunities that have successfully reached and inspired the faculty since the inception of the Governor's Ameritech EdTech Grant. It has been an exciting time to see the faculty mature technologically. They continue to challenge and inspire us to offer additional ways for them to become involved. One important fact we have learned is that COEHS faculty are extremely busy people. Their interest in technology often outstrips their available time. We see a growing number of them who would like to take the next step and work on a more extensive project. The FIDL staff is exploring ways to make it easier for them to do this. We have the support staff in place in FIDL and SENIT; what we need to do is develop various means of empowering faculty who are ready for CD-ROM development, software design, instructional video production, and so on, to do so. This includes incentive plans to support such projects such as sponsoring a mini-grant "competition" in which faculty interested in such projects submit their ideas and we "fund" one or two per semester. We also have an individual in the Dean's Office whose charge is to assist faculty in pursuing outside funding through grant competitions and foundations to support technology projects.

Finally, we believe that much of what we do has been guided by good people and formative evaluations. We would like to conduct some more intentional research and share our findings with the national faculty development community. We are working on ways to do this in the coming year. So, where we go from here will continue to be guided primarily by the faculty themselves as we continue to provide resources, encourage their efforts, and build on their ideas!

Supplementary Materials

Faculty Instructional Development Lab

39 Horrabin Hall   298-1540 or ccMail
Molly Baker, Ph.D. Instructional Designer
Web page: http://www.wiu.edu/users/mifidl/

Mission: To build a network of faculty committed to excellence in teaching with technology, so that our prospective teachers, administrators, and other professionals see and experience the effective use of technology in an instructional context, modeled by professors who know how to use the latest innovations or who provide direction to students as they learn technology skills relevant to their anticipated line of work. By drawing on each faculty member's strengths and experience, our staff help faculty identify resources, provide support during the development phases, and assist in the evaluation of instructional products and processes. Equipment, software, and print materials that the faculty may draw on to be successful in these activities are maintained. Frequent group or individualized training, and one-on-one consultation are available. FIDL staff strive to be responsive, supportive, organized, reliable, creative, realistic, and enthusiastic about the possibilities for developing efficient, effective, and appealing instruction, often through the integration of technology.

Staff: Molly Baker is the instructional designer, with special expertise in instructional development and distance education. She has taught in the Department of Psychology at WIU and coordinated an orientation course offered to first-year students here. Hired in April of 1993 to assist faculty in the College of Education integrate technology into the teacher education curriculum, her role has expanded to serve the College of Education and Human Services faculty as they develop skills for teaching with technology in the 1990s. Her research interests center around effective instructional strategies that promote interaction with remote-site students in interactive television classes. She is assisted by a graduate student from the Department of Instructional Technology and Telecommunications.

OVER

Faculty Instructional Development Lab (FIDL) Facilities and Products:

- Faculty Instructional Development Lab (3 Mac work stations)
    - open to faculty only
- Hardware (Macintosh Quadra, Quadra AV, PowerMac)
    - scanner, VCRs, laserdisc players, monitors, Syquest 88s, microphone, video capture boards, color printer
- Software, documentation, tutorials
    - Graphics and desktop publishing, electronic presentations, authoring, photo/video/sound editing, C-U-See Me, LAN access to many other software titles
- Educational product demos
- Catalogs and periodicals
- Clip art
- Camcorder for faculty checkout
- Digital camera for faculty checkout

Services:

- Training: small group, one-on-one, larger group
    - Occasional full-day, mostly 1-3 hours
- User group (brown bag discussions)
- Step-by-step Job Aids for software (and audio tutorials)
- Internet searching/sharing
- Consulting: distance education/interactive television
    - one-one-one instructional planning
    - product development
    - grant-writing assistance (technology descriptions)
    - evaluation
    - student involvement
- Six targeted technologies:
    1. computer productivity and educational applications
    2. interactive multimedia
    3. telecommunications
    4. instructional video
    5. distance education
    6. instructional design (decision-making in a technology-rich environment, graphics)

Cooperative Work with . . .

- Department of Instructional Technology and Telecommunications
- Academic Computing
- Visual Production Center
- Educational Broadcasting Department
- Faculty Development

Faculty Workshops

College of Education and
Human Services

Workshops sponsored and conducted by
The Faculty Instructional Development Lab
39 Horrabin Hall
298-1540
http://www.wiu.edu./users/mifidl/

Faculty Workshops

A large variety of faculty support services have been designed to serve the diverse faculty at WIU. Workshops have been very popular. They have focused on hands-on technology skills, innovative instructional strategies using technology, technology integration into higher education and preK-12, and awareness sessions on what is happening with technology in education. Topics are selected based on needs assessments and question traffic in the Faculty Instructional Development Lab. Workshops described below were offered as focused, two-hour sessions during the semester, or as 2-3 day, in-depth workshops during break periods between terms.

Basic Skills

Macintosh Basics

An introduction to the basic techniques of interacting with a Macintosh computer. Participants of most other workshops must be familiar with these techniques. Offered individually by appointment to users of computer platforms other than Mac who wish to enroll in other Mac workshops, or to new Mac owners.

Secrets About Your "Way Cool" Macintosh

This hands-on workshop is designed for faculty who use a Mac computer with a color monitor, and would like to learn how to use it more efficiently. We will address the following:

- knowing your own Mac so you can provide important information to the Help Desk when seeking help
- taking care of your Mac to avoid problems
- troubleshooting common problems (e.g., frozen screen, low memory messages)
- organizing your desktop and working efficiently with windows
- learning little-known secrets of the Mac interface

Bring a disk to receive free software that will add functionality to your Mac.

Connecting Your Home Office to WIU and the World

This session will address each of the technical and practical issues involved in connecting a computer to WIU, with a focus on modems; software; accessing servers, your hard drive on campus, and the Internet; downloading files to your home machine; phone lines; private Internet providers; and so on. Academic Computing staff will be present to answer questions.

Tips and Tricks Using ccMail

As e-mail is becoming the dominant mode of communication between our WIU cohorts, and increasingly with our off-campus colleagues, it is becoming more and more important to know how to use the features of ccMail effectively. This workshop will cover the basics of using ccMail and demo/explain the following:

- appropriate "netiquette" for communicating electronically
- how to read files attached to ccMail messages you receive
- how to send attached files to others so they can read them
- how to save messages in folders or archives (and what's the difference?)
- posting questions/requests to the campus bulletin boards
- creating private mailing lists (e.g., campus committee or department colleagues)

Hands-On Skills for Classroom Implementation

Electronic Presentations: Level 1

Using Persuasion 3.0, learn how to create a colorful series of computer slides from your text-only overheads or outlines. These slides can be presented as an attractive electronic presentation in class or at a conference (using a portable computer or one of the computer-equipped classrooms in COEHS). OR The slides can be printed out and made into well-designed transparencies. OR The slide computer file can be converted into real slides by the Visual Production Center. Participants need to bring one blank high-density disk and a topic outline used for a recent class presentation.

Electronic Presentations: Level 2

Prerequisite: Electronic Presentations Level 1 or equivalent experience. Level 1 focuses on design and text; this session covers ways to make your electronic presentations more appealing by adding QuickTime movies, clip art, photos, scanned images, tables, and charts. Also, you will learn to create speaker notes to accompany your presentation. As time permits, participants will learn how to digitize their own photos with a scanner. Bring a high-density disk, the assignment from Level 1, and a photo of your choice.

Advanced Electronic Presentations: Astound

Astound is an application for developing electronic presentations, similar in its capabilities to Persuasion. However, Astound will also permit you to place interactive buttons on the screens that will execute an action (e.g., jump to a different screen, display a chart, play a sound). It also lets you select up to four different "notation pens" to highlight or draw on the screen DURING the presentation. This session will introduce you to the basics of Astound presentation development, and teach you some of its unique features. Prerequisite: Any of the Persuasion workshops.

Electronic Keypads: A New Interactivity Tool

This session will focus on a variety of interactive classroom applications for WIU's wireless, handheld keypads. Participants will have an opportunity to use the keypads in a classroom simulation and view a basic demonstration of how to program in questions for their own classes.

Getting Started on the Internet

Learn what the Internet is and how it can support your work as a faculty member. Locate e-mail addresses of people off campus; find/join a discussion group on topics of interest to you, use search strategies for locating and downloading valuable information from sites around the globe, and discuss ways to use the Internet in assignments given to students. This workshop is for people new to the Internet, or new to using the World Wide Web. Bring a blank floppy disk.

Distance Teaching on WIU's Compressed Video System

Whether you are already scheduled to teach students enrolled at a distance, or are just thinking about doing it in the future, this workshop is for you! Topics addressed include orientation to the equipment, key planning issues, tips for developing TV visuals, important instructional strategies such as how to engage remote-site students in class discussion, and so on. A panel of experienced WIU professors will be present to answer your burning questions. Practice time with the system "up" will also be available. Lunch included!

Creating Multimedia Elements for Instructional Materials

By the end of this session, participants will have some floppy disks full of digital files that can be imported into electronic presentations, desktop-published documents, Web pages, or software that they can create themselves! A brief orientation will be included to explain the basics of digital file types for graphics, video, and sound, and how they can be used in a variety of instructional materials. Using a scanner, special software, and other resources on the LAN, participants rotate between several computer stations making digital Quicktime movies (from VHS tapes and camcorders), digital photographs (from 35mm photos or photoCDs), digital sound files (from musical CDs and a microphone plugged into the computer), digital clip art (from printed clip art, tables, charts, and so on) and digital text (from printed documents).

Creating Instructional Video Using a Camcorder

Do you see a need for your students to acquire some video-development skills that they can use in their future work? Or are you looking for some alternative, active-learning techniques for them that fit your content? This session will help you learn the basics of creating an instructional video (planning, scripting, operating COEHS camcorders, simple editing), offer ideas for interesting video projects for your classes, and provide you with some handouts you can give students for your video assignments. Wear tennis shoes and we'll plan to go outside with the cameras!

Beginning Desktop Publishing

You will learn the basics of "looking good in print"; then, you will create several print documents for your classes using PageMaker 5.0. PageMaker is available on our campus for both Mac and PC platforms. Participants develop a door sign, a newsletter, and effective handouts in this workshop.

Introducing Faculty Web Pages

You will learn what the Internet and the World Wide Web (WWW) are all about. Then, you will learn how to use Netscape to explore the WWW in ways that will contribute to your teaching and your students' learning. Netscape is available on our campus for both Mac and PC platforms. We will explore examples of faculty web pages from WIU as well as other campuses, and get a taste for how to create them. This session can serve as an introduction to using the Web to support your classes.

Developing Faculty Web Pages

FIDL has been receiving lots of questions about what's involved in developing faculty Web pages or even full courses to be offered on the Web/Internet. We are offering four sessions to address your questions:

Session 1: An informational session focused on Web course development (What's involved? What campus resources are available? Includes tips for planning; and samples are demonstrated.)

The other three sessions are a hands-on series in which we will actually develop your own Web pages.

Session 2: We will explore sample faculty pages and address content and design planning. Participants will bring ideas/files to Session 3.
Session 3: We will create the pages using Adobe PageMill.
Session 4: We will upload the files to "ecom" so that they can be viewed on the WWW.

This process is MUCH easier than it was a year ago since we purchased the PageMill software. If you have taken this workshop previously, contact FIDL about the suitability of reenrolling to learn the new, easier process of Web page development. All new folks welcome!

Thinking Visually and Creating Graphics

Are you interested in incorporating more visual elements (i.e., graphics, video clips) into your instruction or instructional materials? Have you often wished you had an artistic eye, especially now that more students seem to be visual learners?

Do you consider yourself less visual than you'd like? After all, you've been working on putting your ideas into words more effectively since third grade, right? Session 1 will introduce you to some techniques for thinking more visually and give you practice in evaluating the visual content of instructional materials using an "Effective Visuals Criteria" tool. This is not a computer skills workshop. Session 2 will provide instruction and practice in editing/developing your own graphics for a multitude of purposes, and *is* hands-on.

Orientation to the Horrabin Hall Mini-Electronic Classrooms

Are you scheduled to teach in one of the Horrabin Hall mini-electronic classrooms this summer or fall? Or are you just interested in seeing one demonstrated? Doug Menke and his technical support staff will provide an orientation to how the rooms/equipment can be used for on-campus teaching during repeating 30-minute periods throughout the day.

Instructional Innovations and Emerging Technologies

Using the Internet in preK-12 Education

How are the schools with Internet access integrating this resource into the classroom? What experiences with the Internet are valuable for students to know if they are planning on preK-12 teaching? Participants are encouraged to take the workshop above prior to enrolling in this one.

Using Computers as a Resource for Collaborative Learning Projects in the preK-12 Classroom

Lincoln School students and teachers will demonstrate how their classroom "works" live from Springfield over our CODEC distance learning system. In addition, the teachers will share issues related to curriculum development, planning, classroom management, and assessment when employing collaborative learning in a technology-rich classroom when the children go home for the day. Opportunities to ask the teachers questions will be provided. Advanced teacher education students are welcome to sit in on this session.

Telecommunications and Teaching/Learning at WIU

Learn how telecommunications services available on our campus can enhance a variety of course activities you may already use in your classes: turning in class assignments and accessing handouts, small-group projects, within-class discussions, conversations with experts, and so on. E-mail, listservs, the Internet, and other options available through WIU's network will be demonstrated and explained. Handouts will be provided and your questions answered!

Multimedia and Education: What's Happening?

You've heard of multimedia, but what is it? Find out what CD-ROMs, videodiscs, stacks, electronic presentations, interactive software, and other types of multimedia technologies are all about. How are they being used in education? What impact are they having on the teaching and learning environment in preK-12 schools, higher education, business, inservice education, and so on? What are the issues? What is happening with multimedia at WIU?

Collaborative Learning with Technology

This session will introduce the current thinking on the benefits and drawbacks of collaborative learning/active learning, its theoretical and research-supported rationale, and the role technology can play in supporting collaborative learning projects in higher education or preK-12. Tips and examples of collaborative learning projects will be shared. This is not a hands-on computer skills session.

Using the Newton for Classroom Observations

The Newton is a hand-held, wireless Personal Digital Assistant developed by Apple Computer. Dr. Cecelia Benelli will present how she and her students have been using it to design and conduct classroom observations, how to upload the data into a Mac loaded with the Learner Profile program, and how to analyze the data. Dr. Bruce Barker will also demonstrate how the Newton can be used to record handwritten "To Do" lists, maintain a personal datebook, and assist with other personal management tasks.

Faculty Instructional Development Lab (FIDL)

Workshop Registration Information

The COEHS is committed to supporting faculty in their use of technology in teaching. For further information on any training session or other FIDL service, or to request additional training topics, contact Dr. Molly Baker, Instructional Designer, FIDL, 298-1540, ccMail, or m-baker@wiu.edu

All hands-on workshops assume that participants are familiar with basic operations of a Macintosh computer or Windows on a PC. If you are a DOS-only user or a new Mac user, you will need a brief orientation to the Mac prior to enrolling in any of the hands-on workshops. All hands-on workshops are held in the Horrabin Hall computer lab, HH 63. Hands-on sessions are limited to 12 participants to better address your needs and questions. Whenever possible, software titles selected for the workshops are available for both PC and Mac platforms on WIU's network.

Registration Form

Name:____

Department:____________________________________

Office Phone: ____________________

The primary computer platform you use is ____DOS____WINDOWS____MAC

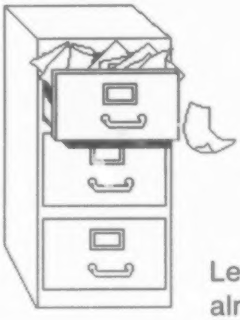
If you primarily use DOS, do you have experience with either Windows or the Mac? ____no ____minimal ____moderate

Workshops and Sessions You Wish To Attend:

Secrets About Your Mac	One____	Two____	Three____
Electronic Pres.: A Multipurpose Tool	One____	Two____	
Getting Started with the Internet	One____	Two____	
Web Page Development Series (3)	Yes ____		
Beginning Desktop Publishing	One____	Two____	
Collaborative Learning w/Technology	Yes ____		
Graphics Series (you may register for one or both)	Thinking Visually____ Creating Graphics____		
Instructional Video	Yes ____		
Distance Teaching	Yes ____		
Advanced Electronic Presentations	Yes ____		
Newton for Observations & Time Mgmt	Yes ____		
Orientation to Mini-Electronic Classrooms	Yes ____		

Since enrollment is limited in all sessions, please let us know if you cannot attend, so that we may notify someone on the waiting list.

Sample



Holiday Ideas "Learn Something New"

Less than two hectic weeks to go! I f you're like most of us, you're already thinking about how you want to spend your time over the holidays and during January. May I offer a few suggestions?

Molly Baker
Faculty Instructional Development Lab

Sample

1. For those who want to totally relax . . .

Read some great books, go skiing, visit friends or relatives, and plan to learn something new next semester at one of the faculty workshops. A detailed listing will be in your mailbox in January.

2. For those who have been wanting to find out what the Internet is all about and might like to devote a little time to this over break . . .

Request the introductory documentation for Gopher (PC or Mac) or Mosaic and the instructions for how to access them from your campus office or your home. See Molly for a brief "getting started" lesson if you'd like.

3. For those who look forward to learning new things about teaching without the rush of the regular semester . . .

Sign up for the two-day, hands-on workshop January 11-12, focusing on authentic instructional tasks (making QuickTime movies, scanned images, and clip art; putting these into electronic presentations, print documents (handouts, calendars, flyers), or Mosaic home pages; learning about CD-ROMs, laserdiscs, and photo CDs; finding out about the new technology-equipped classrooms). This workshop enrollment is limited, so sign up soon. First-day-only enrollees may be accommodated if there is room. See Molly for details.

OVER

4. **For those who look forward to spending some uninterrupted time rethinking a course to be taught second semester . . .**

   Have you been thinking that you'd like to make some meaningful changes/additions to a course you will be teaching again next term? Have you been thinking that it would be good to try integrating technology more into your class, but who has time to pull that all together? Request the documentation developed for the faculty workshop on Using Telecommunications for Class Projects—lots of ideas that promote discussion/communication/cooperation among students or make your syllabus/readings/handouts/and so on available to your students on line. Ideas range from the simple to the more involved.

5. **For those who are going to be teaching on the compressed video system . . .**

   For those of you teaching on the distance education system second semester, I am available to meet with you individually regarding planning issues, adaptation of visuals, instructional strategy tips, and so on. If you anticipate teaching during the summer or next fall (or would like to learn about this new technology in the event you get involved at a later date), a faculty workshop will be offered during April.

7. **For those who have been wanting to set up your home office to connect to campus and might have some time to do this over break . . .**

   Request the PC or Mac packet on what equipment and software you need and what types of activities you can do from home.

All print materials mentioned above can be acquired from the Faculty Instructional Development Lab (FIDL) by stopping by HH39 or sending Molly Baker a ccMail message requesting a print or electronic copy. Also, if you'd like a lesson on any of the software, or consultation about implementation of any of your ideas, call Molly at 298-1540. She will be on campus most of the break. All workshops offered during the fall semester have documentation available (for self-instruction) or individual lessons that can be scheduled by appointment.

Western Illinois University

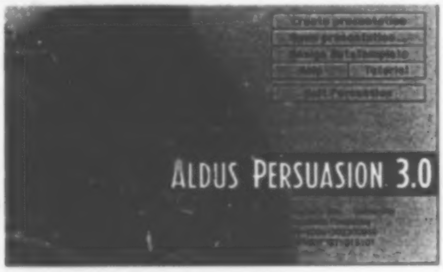
College of Education and Human Services
Faculty Instructional Development Lab

PERSUASION 3.0

Sample

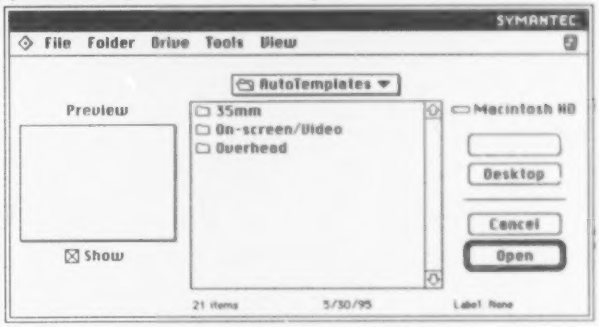
CREATING A SIMPLE PRESENTATION USING AN AUTOTEMPLATE

AutoTemplates are predesigned slide formats which speakers may choose to use if they do not wish to create their own. There are eighty AutoTemplates included in Persuasion 3.0.

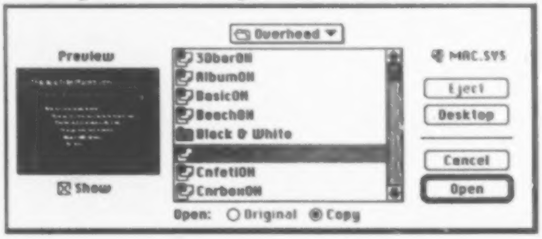

Tutorial
ALDUS PERSUASION 3.0

CHOOSING A TEMPLATE

1. Double-click the Persuasion 3.0 folder.
2. Double-click the Persuasion application icon.
   The "Open Presentation" dialog box appears-------->.
3. Select "Open Presentation."
4. Double-click the "AutoTemplates" folder.
   The AutoTemplate selections are in the Persuasion 3.0 folder. If the window below does not appear, navigate to the AutoTemplates folder on your hard drive or in the Presentation Applications folder on Mac.Sys.


SYMANTEC
File
Folder
Drive
Tools
View
AutoTemplates
Preview
35mm
On-screen/Video
Overhead
Macintosh HD
Desktop
Cancel
Open
☒ Show
21 items
5/30/95
Label None

5. Double-click on 35mm, On-screen/Video or Overhead.
   If you anticipate making real 35mm slides or real overhead transparencies from your Persuasion screens, select the template you like from the respective folders. Templates from any folder look fine on a computer screen.
6. Click on any of the AutoTemplates, noting what they look like in the Preview box.
   The Preview box is located at the left side of the dialog box. As long as "Show" has an "X" in the box, a preview of the AutoTemplate will be shown.


Overhead
Preview
3DbarON
AlbumON
BasicON
BeachON
Black & White
CnfetiON
CnrbonON
MAC.SYS
Eject
Desktop
Cancel
Open
☒ Show
Open: ○ Original ● Copy

BEST COPY AVAILABLE

TechChannel

A Publication of the Faculty Instructional Development Lab

College of Education and Human Services Western Illinois University Vol. 1 No. 3

Internet and You

When I began exploring the Internet system last Fall in preparation for the January faculty workshop, I began subscribing to various listserv discussion groups that pertained to preK-12 education and educational technology. Daily I review the messages I receive and forward individual ones to faculty in the College that I think might be interested in particular items. For many of you, I am only aware of your department affiliation. If you would like me to keep an eye out for your interests on the Internet, please send me a ccMail or print message with your particular interests listed. I would be glad to forward to you anything I happen to come across that relates to your interests.

If you were unable to attend the Internet Workshops and would like a lesson or a copy of the documentation (Mac or IBM), contact Molly at 298-1540 or ccMail.

Fall Ideas For COEHS Courses

Looking for some Fall class projects for your students that integrate technology into your content? Projects that give your students an authentic experience using telecommunications? Projects that link them to real students for an educational purpose? Link your students via e-mail with a class in a public school that has access to the Internet system. Your students could be subject-matter experts or partners with elementary children working on projects about South America, pollution, or Huck Finn. They could take the role of Euclid or Harry Truman or Adolf Hitler and respond to on-line interview questions from the students. If this idea sounds interesting to you, see Molly Baker for further information (ccMail or 298-1540).

Sample

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College of Education and Human Services
Western Illinois University
Macomb, Illinois

1996

Supported by
The Governor's Ameritech EdTech Grant

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